

SEARS, ROEBUCK AND CO., CHICAGO



Electrical Goods

Kitchen Power Units
Electric Sadirons
Electric Washing Machines
Telephones and Telephone Supplies
Electric Fans, Trains
Batteries and Transformers
Electric Motors and Domestic Heating
Appliances
Electric Fireless Cookers
Flash Lights and Batteries
Medical Batteries and Vibrators
Telegraph Outfits
Electric Light Fixtures and Supplies
Electric Lighting Plants
Auto Lamps and Lamp Sundries
Ignition Accessories

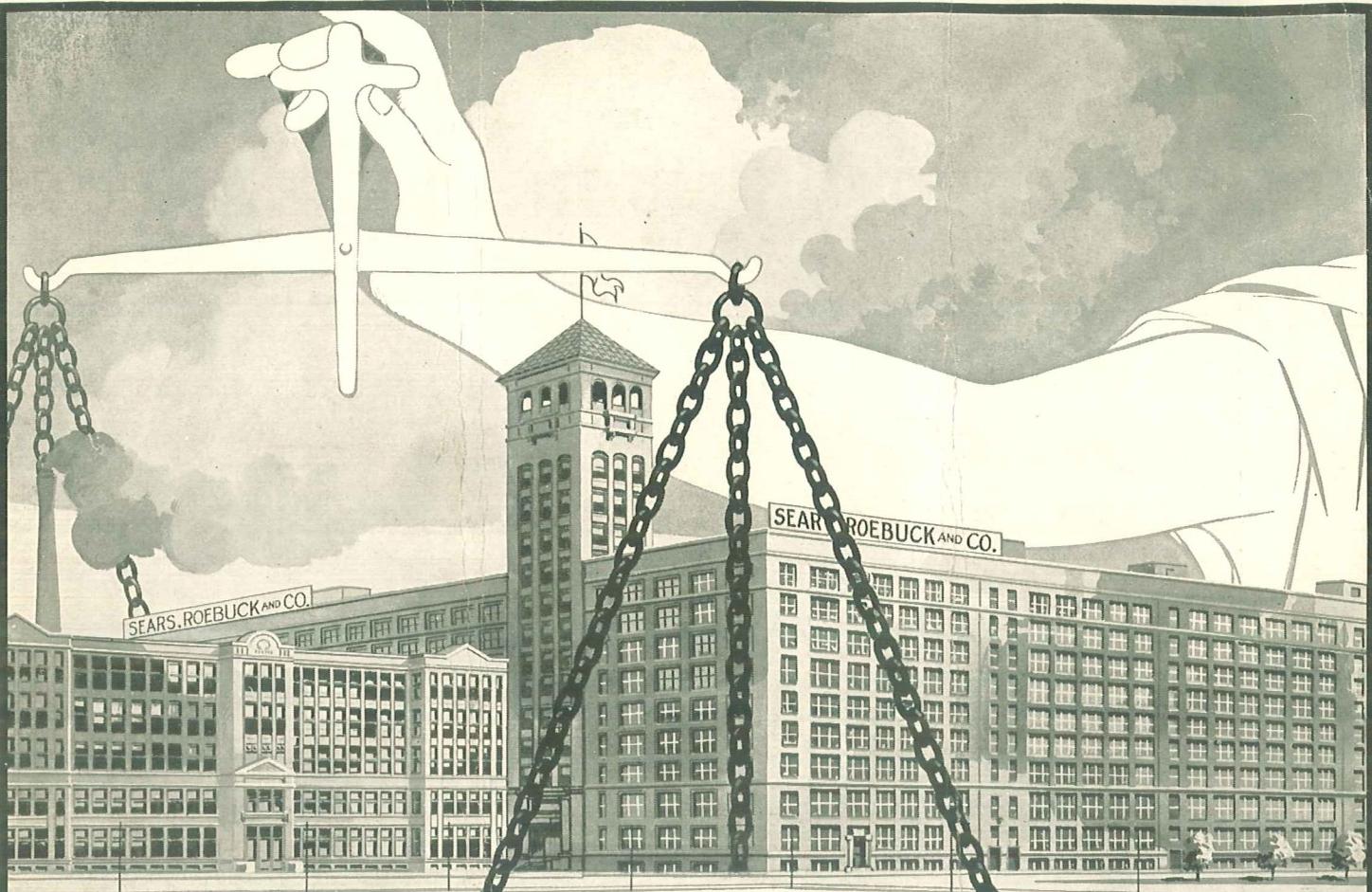
520

To Find
What You
Want See
Index
Page 768A



Have You
Our
Big
Catalog?
Read Page 1

ORIGINATORS OF THE GUARANTEE THAT
STANDS THE TEST IN THE SCALES OF JUSTICE



We Guarantee

That each and every article
in this catalog is exactly as
described and illustrated.

We guarantee that any article pur-
chased from us will satisfy you per-
fectly; that it will give the service you
have a right to expect; that it repre-
sents full value for the price you pay.

If for any reason whatever you are dissatisfied
with any article purchased from us, we ex-
pect you to return it to us at our expense.

We will then exchange it for exactly what you want, or
will return your money, including any transportation
charges you have paid. ■ ■ ■ ■ ■

SEARS, ROEBUCK AND CO., Chicago

YOUR
MONEY
WILL BE
PROMPTLY
RETURNED
IF YOU
ARE NOT
SATISFACTION

SEARS, ROEBUCK AND CO., CHICAGO

THE Following Pages of This Special Catalog of Electrical Goods Are a Part of Our Big 1490-Page General Catalog Here Illustrated.

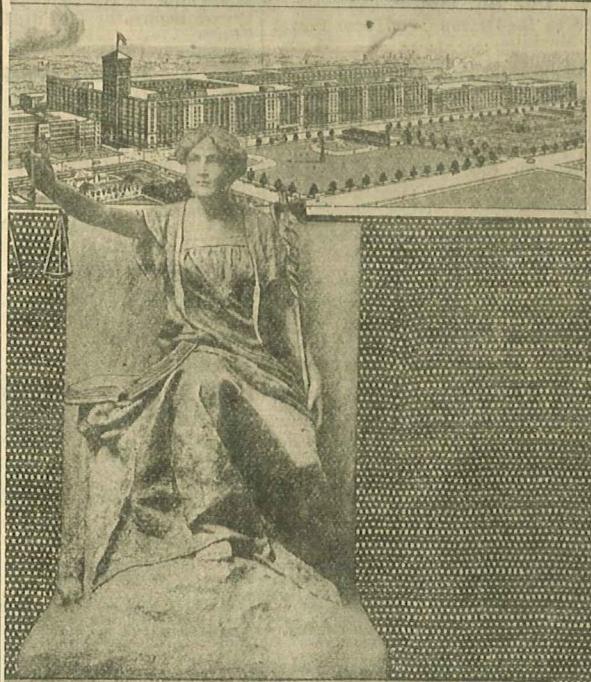
C For your convenience we have printed and bound the electrical goods section of our big General Catalog separate from the other pages of the Big Book. This explains why certain lines at the bottom of some of the pages or elsewhere in the catalog refer to pages not found in this special catalog. In addition to these General Catalog pages we have included a few special pages of kindred merchandise.

C The pages which precede and the pages which follow the electrical goods section in our big General Catalog comprise a great many other lines of merchandise—dry goods, wearing apparel, home furnishings, jewelry, musical instruments, toys, household supplies, hardware and farm supplies. If you have not a copy of our big General Catalog be sure to write for one and make it a rule to consult its pages whenever you need supplies of any kind.

C We offer you vastly greater buying opportunities than you can have through any other method of merchandising. From our big General Catalog you can build a home and furnish it; clothe every member of your family and supply them with reading, music and physical recreation; equip and maintain a farm, an office, a factory, an automobile or a motor boat; in fact, supply almost every daily need of whatsoever kind—all at bedrock prices based on the most economical selling methods.

C But just as the farm yields most bountifully by intensive cultivation, so this catalog offers its greatest benefits when constantly referred to as each need arises. This is YOUR OPPORTUNITY TO SAVE MONEY.

Our Terms We require cash with order. The best ways to send money are in the form of an express money order, postoffice money order, a bank draft, your personal check, or currency in a registered letter. Parcel post, express and freight rates are shown on pages 765A, 766 and 767 of this book. See index on page 768A.



WITNESSES OF THE GUARANTEE THAT
WE TEST IN THE SCALES OF JUSTICE

CATALOG 134

INDEX
0-765

FOR ORDER BLANKS
SEE BACK OF CATALOG

Electric Motors for Power Machinery

Use Electricity to Run Your Machinery.

If you have electricity on your place, or can easily obtain it, you will find electric motors a most useful, economical and convenient type of engine. These little electrical engines start or stop at the turn of a switch. The pulley gives a steady pull at a practically constant speed. They have practically nothing to get out of order and are little or no trouble to handle. And they give the best of service at surprisingly low cost.

For Every Kind of Work.

The farm, the small shop and the home are now following the example of progressive business houses in using motors for practically every kind of work. The table below will give some idea of their many uses. Think of the machines you can run with a belt. We have efficient, powerful little motors that will operate them easily and at a low cost.

Easy to Operate and Control.

Motors start or stop at the turn of a small switch. With some kinds the speed can be regulated all the way from one-quarter to full speed. We send full directions with each motor. No need to be an electrician to install it. About all the attention the motors require is a little oiling. And they last many years, even though worked very hard.

Economical—Convenient.

A motor uses only enough power to do the work in hand. And as it is easily stopped and started, you run it only while it is needed—not one second more. Think of the saving over an ordinary engine, which you dislike to stop because it is some trouble to start it again, and which eats up nearly as much fuel running light as when loaded heavy.

And motors are so convenient. They take up very little space (notice the small dimensions), and with their light weight are easily moved about. They are practically free from vibration, so can be mounted on floors, walls, ceilings or frames of machines. They are quiet and they give off no smoke, moisture or soot; splash no oil.

We Guarantee Satisfaction.

Every one of our motors is sold with the understanding that it MUST give satisfactory service. It may be returned to us at our expense if you are dissatisfied for any reason whatever. We can afford to make this offer because the materials used in our motors are of high quality, the workmanship is high grade, and each motor is thoroughly tested before being shipped.

Free Advice.

If you have any sort of power driven machines, it will pay you to investigate electric motors. It will cost you nothing to let us figure for you. Find out from the company supplying electricity in your neighborhood what kind of current they furnish (direct or alternating); if alternating, how many cycles and whether single, two or three-phase; and finally, the voltage. Let us know, too, the machines you wish to run, their speeds and, if you can, the horse-power required. We will then gladly recommend the best motor for your needs and give you any further information you wish, without obligation to you.

Table of Usual Motor Requirements

Also See Special Motors in General Catalog.

For the Home.

Machine to Be Driven	Horse-Power
Washing Machine.....	1/8 - 1/4
Vacuum Cleaner.....	1/8
Sewing Machine.....	1/20
Buffer and Grinder.....	1/20 - 1/10
Coffee Mill.....	1/8 - 1/4
Meat Chopper.....	1/4
Bread Mixer.....	1/4
Vegetable Peeler.....	1/4
Cream Separator (300 qts. hour).....	1/4
Churn.....	1/2 - 1
Ice Cream Freezer.....	1/8 - 1/4
Cider Mill.....	1/2 - 3
Pump Jack.....	1/2

For the Dairy.

Machine to Be Driven	Horse-Power
Milker (2 cows).....	1/10

Machine to Be Driven Horse-Power

Cream Separator (300 qt. hour).....	1/4
Churn.....	1/4 - 1
Ice Cream Freezer.....	1/8 - 1/4

For the Workshop.

Machine to Be Driven	Horse-Power
Grindstone.....	1/4 - 1/2
Power Drill.....	1/4 - 3/4
Lathe and Countershaft.....	1/4 - 2
Cord Wood Saw.....	5
Wood Splitter.....	2
Concrete Mixer.....	2-10

For the Farm.

See Also "For the Home."

Machine to Be Driven	Horse-Power
Cane Mill.....	3/4 - 5
Pump Jack.....	1/2

Machine to Be Driven Horse-Power

Grindstone.....	1/4 - 1/2
Cord Wood Saw.....	5
Wood Splitter.....	2

Corn Sheller Poultry Vegetable Cutter

Bone Cutter.....	1/4 - 1
Grist Mill (Small).....	1/4 - 3
Grist Mill (Large).....	15 - 30
Grain Grader and Separator.....	1/4 - 1/2
Fanning Mill.....	1/2
Ensilage Cutter.....	2 - 20
Husker and Shredder.....	4 - 15
Grain Elevator.....	1 - 3
Hay Press.....	2 - 7 1/2
Hay Hoists and Carrier.....	2 - 5
Threshing, Cleaning and Sacking.....	3 - 20
Feed Grinder.....	4 - 15
Horse Groomer.....	1

Small Power Motors at Low Prices.

Direct and Alternating Current.

\$13.00 to \$15.00

Direct Current.

\$13.00 to \$16.00

Alternating Current.

These are fractional horse-power motors, built of high grade material, carefully designed and constructed to give excellent service in the home and meet the requirements of all users of small motors. In the home they can be used to operate washing machines, churning, ice cream freezers, grinders and many other devices. Dentists, mechanics, blacksmiths, jewelers, garages and many others have work for these motors.

Cast iron frame, phosphor bronze bearings of ample size. High carbon steel shaft, 1/2 inch in diameter, and feltwick oil cups. Windings are made of high grade enameled cotton covered wire, impregnated with insulating compound to withstand any reasonable amount of moisture. Binding posts are conveniently located for electrical connections.

All motors are finished in black enamel with brass trimmings.

Motors can be operated on 105 to 115-volt current. Decrease in voltage decreases speed. Be sure to state voltage and whether you have direct or alternating current. If alternating current give number of cycles. The prices below do not include cord and plug. Cord may be connected to any lamp socket. Be sure to select motor large enough for your work and also suited to your current, direct or alternating.

Flat face pulleys 1 1/2 or 2 inches in diameter by 2-inch face, \$1.00 extra. State diameter wanted.

60-Cycle, 105 to 115-Volt Alternating Current Motors.					105 to 115-Volt Direct Current Motors.		
Catalog No.	57H7571	57H7572	57H7573	57H7574	57H7586	57H7587	57H7588
Horse-power.....	1/10	1/8	1/6	1/4	1/10	1/8	1/6
Shipping weight, pounds.....	19	21	24	24	18	20	22
Speed, R. P. M.....	1,725	1,725	1,775	1,710	1,800	1,800	1,800
Height, inches.....	5 1/2	5 1/2	5 1/2	6 1/8	5 1/2	5 1/2	5 1/2
Diameter, inches.....	5 1/2	5 1/2	5 1/2	6 1/8	5 1/2	5 1/2	5 1/2
Length over all, inches.....	7 1/8	8 1/8	8 1/8	8 1/8	7 1/8	8 1/8	8 1/8
Size of pulley, inches.....	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8	1 1/8
Size of round belt, in.....	1/4	1/4	1/4	1/4	1/4	1/4	1/4
Price, each.....	\$13.00	\$14.00	\$15.00	\$16.00	\$13.00	\$14.00	\$15.00

1/10 Horse-Power.

Utility Motors.

1/20 Horse-Power.

Direct and Alternating Current.

These Utility Motors are the same quality and construction as our power motors. There are a great many uses around the home or office for a motor of this type. They are not only suited for grinding and buffing, but can be used to drive small machines and household devices, such as washing machines, churning and ice cream freezers. Each motor is equipped with a grinding wheel 5 inches in diameter by 1/2 inch wide, a flat face pulley 1 1/2 inches in diameter and a double grooved pulley. These motors run at 1,800 revolutions per minute and are larger than the average utility motors, which usually run several thousand revolutions per minute. Slower speed means longer life and better service.

Motors will operate on 105 to 115-volt current. Be sure to order motor to suit your current. Flat face pulleys 1 1/2 or 2 inches in diameter by 2-inch face, \$1.00 extra. State diameter wanted.

60-Cycle, 105 to 115-Volt Alternating Current Utility Motors.

Catalog No.	57H7565	57H7566	57H7567	57H7568
Horse-power.....	1/20	1/10	1/8	1/6
Shpg. wt., lbs.....	21	23	25	27
Price, each.....	\$13.65	\$15.00	\$16.65	\$17.75

105 to 115-Volt Direct Current Utility Motors.

Catalog No.	57H7560	57H7561	57H7562	57H7563
Horse-power.....	1/20	1/10	1/8	1/6
Shpg. wt., lbs.....	21	23	25	27
Price, each.....	\$13.65	\$15.00	\$16.65	\$17.75

Flexible Cord With Terminals and Plug.

No. 57H7590 To use with Power and Utility Motors. Cord of standard quality. Length, 15 feet. Shipping weight, 12 ounces.

Price, complete.....\$1.20



Fractional Horse Power Electric Motors

One-Sixth to One-Half Horse-Power, Alternating Current, 110 Volts.

Washing machines, cream separators, churning pumps and many other machines requiring a small amount of power can be run with these motors. You can run your lathes, drills and forge blowers in your workshop, or the small feed grinder, etc., in your barn.

These single phase alternating current motors are built by the same company that makes the direct current motors listed to the right and are almost identical in appearance. The manufacturers are a well known company whose reputation is an assurance that the details of design are correct.

Details of Construction.

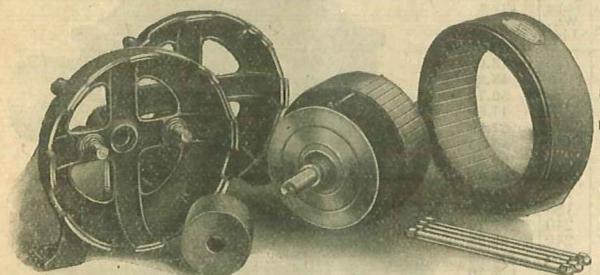
All single phase (two-wire) alternating current motors have to have some means for making them self starting. These motors are of the self starting split phase type; just close the switch and it starts.

For those interested in the technical details it may be stated that starting is accomplished by means of a separate field winding of a fewer number of turns and of smaller size wire than the main field winding. This winding produces somewhat the same magnetizing field as a two-phase motor and furnishes the necessary torque for starting. When the speed attained by the motor is such that a single phase winding can easily carry the full load, the auxiliary winding is automatically cut out by a centrifugal switch. This switch is rugged in its construction and positive in its action.

Ring oiled bearings are used on the $\frac{1}{2}$ horse-power motors and wick oiled bearings on the smaller sizes. Pulleys are furnished in the sizes shown without additional cost.

How to Order

Before you order you must find out whether you have direct current or alternating current, the voltage, and in the case of alternating current, the frequency. The motors listed below to the left will operate only on alternating current of 110 volts and 60 cycles. If you do not know, tell us how the name plate of your electric meter is marked, or ask the company supplying you with power. They will gladly tell you.

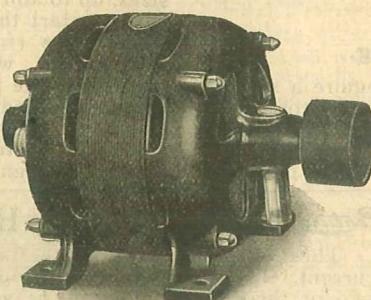


110-Volt 60-Cycle Single Phase Alternating Current Fractional Horse-Power Motors.

Catalog No.	Horse Power	Synchronous Speed	Pulley Size	Lgth. of Shaft	Hgt. of Motor	Approx. Dia. of Wt.	Shpg. Lbs.	Price
57H7535 $\frac{1}{2}$	$\frac{1}{6}$	1,200	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	37	\$19.75
57H7536 $\frac{1}{4}$	$\frac{1}{4}$	1,800	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	37	20.15
57H7537 $\frac{1}{4}$	$\frac{1}{4}$	1,200	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	37	22.90
57H7538 $\frac{1}{2}$	$\frac{1}{2}$	1,800	$3\frac{1}{2} \times 2$	$3\frac{1}{4}$	$13\frac{1}{4}$	$9\frac{1}{4}$	65	31.75
57H7539 $\frac{1}{2}$	$\frac{1}{2}$	1,200	$4\frac{1}{2} \times 2\frac{1}{2}$	$3\frac{1}{4}$	$13\frac{1}{4}$	$9\frac{1}{4}$	65	37.00

One-Sixth to One-Half Horse-Power, Direct Current, 110 Volts.

These motors are built by a company whose world wide reputation makes their reliability unquestionable. They are compact, neat, handsome and thoroughly dependable. They are all compound wound, giving them a higher starting torque than shunt wound motors.



The direct and alternating current motors listed on this page are almost identical in external appearance, and will be found applicable to the same small power operations in the home, store, shop or barn. Many of the devices mentioned on page 4, such as bread mixers, coffee mills, meat choppers, machine tools and small feed grinders can be operated.

Simple Rugged Construction.

The picture below shows one of the $\frac{1}{2}$ horse-power motors taken apart to give you an idea of how well built these motors are. The bearings of the $\frac{1}{3}$, $\frac{1}{4}$ and $\frac{1}{6}$ horse-power motors are wick oiled from large cups, which can be seen in the central picture, while the $\frac{1}{2}$ horse-power machines have ring oiled bearings, as shown below. Pulleys are furnished without additional cost.

All dimensions in the accompanying lists are given in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

Easy to Operate.

It is intended that these direct current motors shall be started merely by closing the switch. In a very few cases where the motors are required to start under full load it may be desirable to use starting boxes with the $\frac{1}{2}$ horse-power motors. We are prepared to furnish starters for these at an additional cost of \$3.80.

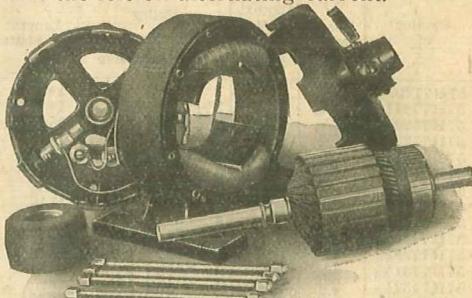
How to Order

Before you order be sure to inquire of the company supplying you with power whether they are furnishing you with direct or alternating current, and the voltage, or tell us what is on the name plate of your electric meter. The power company will be glad to tell you. The motors at the right below operate on direct current of 110 volts only, and those at the left on alternating current.

Six Shipping Points.

The motors listed on this page can be shipped from any of the warehouses named below, reducing the freight charges to a minimum and assuring quick delivery.

BOSTON, MASS.
CHICAGO, ILL.
CINCINNATI, OHIO.
ST. LOUIS, MO.
NEW YORK, N.Y.
PHILADELPHIA, PENN.



110-Volt Direct Current Fractional Horse-Power Motors.

Catalog No.	Horse Power	Load Speed	Pulley Size	Bore	Shaft	Lgth. of Motor	Hgt. of Frame	Approx. Dia. of Wt.	Shpg. Lbs.	Price
57H7520 $\frac{1}{3}$	$\frac{1}{3}$	1,100	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$9\frac{1}{4}$	$7\frac{1}{2}$	$6\frac{1}{2}$	35	\$15.20	
57H7521 $\frac{1}{4}$	$\frac{1}{4}$	1,100	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	35	19.10	
57H7522 $\frac{1}{4}$	$\frac{1}{4}$	1,100	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	35	19.95	
57H7524 $\frac{1}{2}$	$\frac{1}{2}$	1,100	$2\frac{1}{2} \times 1\frac{1}{2}$	$5\frac{1}{2}$	$11\frac{1}{2}$	$7\frac{1}{2}$	$7\frac{1}{2}$	36	21.10	
57H7525 $\frac{1}{2}$	$\frac{1}{2}$	1,700	$3\frac{1}{2} \times 2$	$3\frac{1}{4}$	$13\frac{1}{4}$	$9\frac{1}{4}$	$8\frac{1}{4}$	63	31.25	
57H7526 $\frac{1}{2}$	$\frac{1}{2}$	1,100	$4\frac{1}{2} \times 2\frac{1}{2}$	$3\frac{1}{4}$	$13\frac{1}{4}$	$9\frac{1}{4}$	$8\frac{1}{4}$	63	36.75	

Alternating Current *Century* Motors

Single Phase, 60-Cycle, 110 and 220-Volt Repulsion-Induction Type.

Century motors are widely known for their excellent characteristics and their reliability of service. They operate with a high efficiency and a high power factor. They will develop a starting torque (or pull) of not less than $2\frac{1}{2}$ times full load torque, and are guaranteed to bring up to speed a load equal to at least $1\frac{1}{2}$ times their rated output. They will carry temporary overloads of 50 per cent.

They Are Self Starting.

Century motors are self starting and require a smaller starting circuit than split phase motors, such as listed opposite. These motors have especially designed commutators and brushes which are in service only while starting. When they nearly reach full speed, a governor

removes the brushes from the commutator and short circuits the armature windings. Technically these motors are said to start as repulsion motors and run as induction motors.

Low Starting Current.

Century motors take an initial current (at the time of closing the switch) of only $2\frac{1}{2}$ to 3 times full load running current, while split phase motors take as high as 5 to 7 times full load current. With the smaller sizes, up to and including 5 horse-power, all that is necessary to start the motor is to close the line switch. For larger sizes (from $7\frac{1}{2}$ horse-power up) if you want a starting box, write us for prices, giving the voltage of your line. The fact that these motors take a small starting current has led the electric lighting companies in many places to recommend their use, because they do not appreciably affect the voltage regulations of the line—they do not cause the lights to fluctuate.

"M" Type *Century* Motors, $\frac{1}{8}$ to $\frac{1}{4}$ Horse-Power

The "M" type motors are for the usual 110-volt 60-cycle alternating current. These motors are all single phase and can be operated from single, two or three-phase lines, if the voltage and frequency are correct. They start by merely closing a switch.

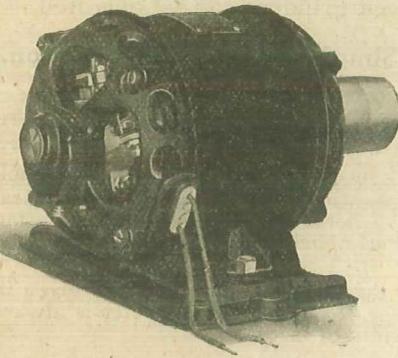
These "M" type motors are only made in sizes up to $\frac{1}{4}$ horse-power. They are light. They are equipped with sliding bases and are clamped to these bases by two bolts, one of which may be seen in the illustration.

The pulley which we furnish with the $\frac{1}{8}$ horse-power motors is of the double flange type; others are of the crown face type.

Before you order be sure you have alternating current of 110 volts, and 60 cycles or 7,200 alternations.

All dimensions given in the table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next.

These motors are shipped direct from the factory in ST. LOUIS, MO.



$\frac{1}{4}$ Horse-Power "M" Type Motor.

"P" Type *Century* Motors, $\frac{1}{6}$ to 10 Horse-Power

Interchangeable 110 and 220-Volt, 60-Cycle, Single Phase, Alternating Current.

The "P" type motors in the following list are wound interchangeably for 110 and 220-volt 60-cycle circuits and will operate satisfactorily on voltages from 100 to 115 or 200 to 230 by properly connecting. Instructions are furnished with each motor.

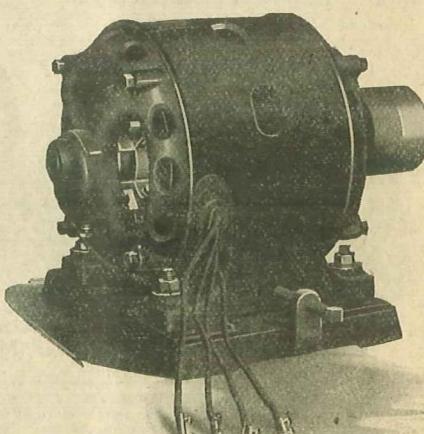
The prices shown include crown pulleys and sliding bases. Before ordering be sure you have alternating current of 110 or 220 volts, and 60 cycles or 7,200 alterna-

tions. Tell us what is on the name plate of your electric meter or ask the company supplying you with power what kind of current it is. They will gladly tell you.

All dimensions given in table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next.

These motors are shipped from ST. LOUIS, MO.

Catalog No.	Horse-Power	Approximate Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Ap-prox. Shpg. Wt., Lbs.	Price
			Size	Bore			Length	Width		
57H7720 $\frac{1}{6}$	1/6	1,105	2 x 2	5 $\frac{1}{2}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	\$ 43.20
57H7721 $\frac{1}{6}$	1/6	1,750	2 $\frac{1}{4}$ x 2 $\frac{1}{2}$	5 $\frac{1}{2}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	43.20
57H7722 $\frac{1}{6}$	1/6	1,165	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	5 $\frac{1}{2}$	14 $\frac{1}{8}$	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	85	52.70
57H7723 $\frac{1}{6}$	1/6	1,750	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	5 $\frac{1}{2}$	14	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	75	47.60
57H7724 $\frac{1}{6}$	1/6	1,165	2 $\frac{1}{2}$ x 2 $\frac{1}{2}$	5 $\frac{1}{2}$	14 $\frac{1}{8}$	10 $\frac{1}{4}$	11 $\frac{1}{2}$	7	185	57.10
57H7725 $\frac{1}{6}$	1/6	1,750	3 x 3	3 $\frac{1}{2}$	15 $\frac{1}{8}$	11 $\frac{1}{16}$	13 $\frac{1}{4}$	7 $\frac{1}{8}$	185	55.25
57H7726 $\frac{1}{6}$	1/6	1,165	3 x 3	3 $\frac{1}{2}$	15 $\frac{1}{8}$	13 $\frac{1}{16}$	14 $\frac{1}{2}$	10	140	69.90
57H7727 $\frac{1}{6}$	1/6	1,750	4 x 3	3 $\frac{1}{2}$	15 $\frac{1}{8}$	13 $\frac{1}{16}$	14 $\frac{1}{2}$	10	140	69.90
57H7728 $\frac{1}{6}$	1/6	1,165	4 x 3	3 $\frac{1}{2}$	17 $\frac{1}{16}$	13 $\frac{1}{16}$	14 $\frac{1}{2}$	10	185	86.40
57H7729 $\frac{1}{6}$	1/6	1,750	4 x 3	3 $\frac{1}{2}$	17 $\frac{1}{16}$	13 $\frac{1}{16}$	14 $\frac{1}{2}$	10	185	81.25
57H7730 $\frac{1}{6}$	1/6	1,165	4 x 4 $\frac{1}{2}$	1	21 $\frac{1}{2}$	13 $\frac{1}{16}$	16 $\frac{1}{2}$	10	240	97.75
57H7731 $\frac{1}{6}$	1/6	1,750	4 x 4 $\frac{1}{2}$	1	21 $\frac{1}{2}$	13 $\frac{1}{16}$	16 $\frac{1}{2}$	10	240	97.50
57H7732 $\frac{1}{6}$	1/6	1,750	4 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	18 $\frac{1}{16}$	23	19	18	285	114.30
57H7733 $\frac{1}{6}$	1/6	1,165	4 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	18 $\frac{1}{16}$	22 $\frac{1}{16}$	20 $\frac{1}{8}$	18 $\frac{1}{16}$	365	139.70
57H7734 $\frac{1}{6}$	1/6	1,750	4 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	18 $\frac{1}{16}$	22 $\frac{1}{16}$	20 $\frac{1}{8}$	18 $\frac{1}{16}$	365	139.70
57H7735 $\frac{1}{6}$	1/6	1,165	5 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	27 $\frac{1}{2}$	21 $\frac{1}{16}$	16 $\frac{1}{2}$	465	165.00	
57H7736 $\frac{1}{6}$	1/6	1,750	5 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	27 $\frac{1}{2}$	21 $\frac{1}{16}$	16 $\frac{1}{2}$	465	165.00	
57H7737 $\frac{1}{6}$	1/6	1,750	5 x 4 $\frac{1}{2}$	1 $\frac{1}{2}$	27 $\frac{1}{2}$	21 $\frac{1}{16}$	16 $\frac{1}{2}$	465	171.50	
57H7738 $\frac{1}{6}$	1/6	1,165	6 x 5 $\frac{1}{2}$	1 $\frac{1}{2}$	29 $\frac{1}{16}$	22 $\frac{1}{16}$	23 $\frac{5}{8}$	16 $\frac{1}{2}$	610	228.50
57H7739 $\frac{1}{6}$	1/6	870	7 x 5 $\frac{1}{2}$	1 $\frac{1}{2}$	28 $\frac{1}{16}$	25 $\frac{1}{8}$	26 $\frac{5}{8}$	16 $\frac{1}{2}$	700	277.00
57H7740 $\frac{1}{6}$	1/6	1,750	6 x 5 $\frac{1}{2}$	1 $\frac{1}{2}$	29 $\frac{1}{16}$	22 $\frac{1}{16}$	23 $\frac{5}{8}$	16 $\frac{1}{2}$	610	232.00
57H7741 $\frac{1}{6}$	1/6	1,165	7 x 5 $\frac{1}{2}$	1 $\frac{1}{2}$	28 $\frac{1}{16}$	25 $\frac{1}{8}$	26 $\frac{5}{8}$	16 $\frac{1}{2}$	700	277.00
57H7742 $\frac{1}{6}$	1/6	870	8 x 6 $\frac{1}{2}$	1 $\frac{1}{2}$	28 $\frac{1}{16}$	25 $\frac{1}{8}$	26 $\frac{5}{8}$	16 $\frac{1}{2}$	745	356.00
57H7743 $\frac{1}{6}$	1/6	1,750	7 x 5 $\frac{1}{2}$	1 $\frac{1}{2}$	29 $\frac{1}{16}$	22 $\frac{1}{16}$	23 $\frac{5}{8}$	16 $\frac{1}{2}$	610	274.00
57H7744 $\frac{1}{6}$	1/6	1,165	8 x 6 $\frac{1}{2}$	1 $\frac{1}{2}$	28 $\frac{1}{16}$	25 $\frac{1}{8}$	26 $\frac{5}{8}$	16 $\frac{1}{2}$	745	340.00
57H7745 $\frac{1}{6}$	1/6	870	9 x 7 $\frac{1}{2}$	2 $\frac{1}{16}$	37 $\frac{1}{4}$	30 $\frac{1}{16}$	32 $\frac{1}{2}$	17 $\frac{1}{4}$	1,385	406.00

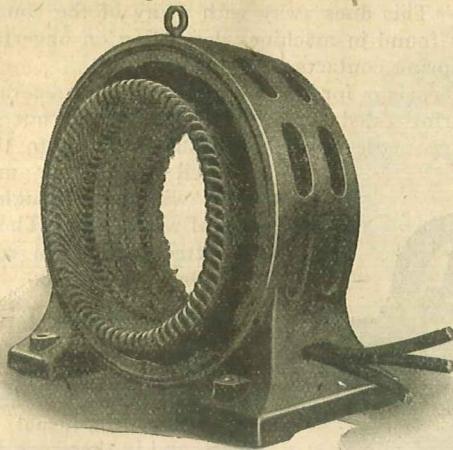


2 Horse-Power Century Motor.

Two and Three Phase Motors

110 and 220-Volt, 60-Cycle, Alternating Current, Squirrel Cage Type.

The simplicity and durability as well as the excellent operating characteristics and advantages in transmission of power make these motors very



The Stator.

desirable for classes of work requiring a large amount of power at a considerable distance from the source of supply. These motors require little attention other than an occasional draining and filling of the oil wells. They offer an additional advantage in point of safety where inflammable dust, lint or gases exist, because they have no moving contacts such as commutators and brushes where sparking may occur.

The accompanying illustrations show the stator (or stationary part) and the rotor (or rotating part) of our polyphase induction motors of the squirrel cage type. These two parts with the end frames and bearings constitute all the working parts of the motor. The simplicity of this type of machine is at once apparent.

Mechanical Features

Two and three-phase motors of this type are self starting and require no electrical connections between

the stator and the rotor, no brushes or moving contacts. It will be seen that this construction makes for long life. The rotating part of these machines, the rotor, is of the rugged type that gives these machines the name "squirrel cage."

The bearings of our squirrel cage motors are of the ring oiled type and are liberally proportioned. The oiling rings, which dip into large oil wells, carry a steady stream of oil up over the bearings. The oil wells are fitted with drain cocks for removing the old oil.

Unless otherwise ordered these motors are furnished with a cast iron sliding base. The motors are fastened to the bases by bolts of sufficient size to permit mounting on the side wall or ceiling. The motors will be shipped as floor type unless the order requests us to shift the end frames to the position for wall or ceiling mounting.

Our Price Lists

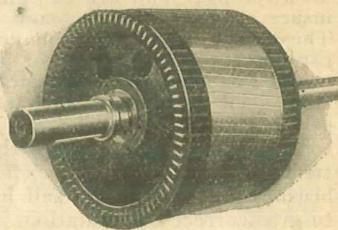
The accompanying price lists cover 110 and 220-volt, 60-cycle, two and three-phase alternating current motors from $\frac{1}{2}$ to 20 horse-power. Motors of $7\frac{1}{2}$ horse-power and larger are not built for 110 volts. Starters are not furnished with the 5 horse-power and smaller motors but are included in the prices for larger sizes. Pulleys are furnished of the dimensions shown.

We have attempted to give some approximate dimensions of the motors for the convenience of our customers. Where accurate dimensions are required we suggest that you write for certified figures. All these dimensions are in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

Be sure to state whether you want your motor for 110 or 220-volt service and whether for two or three-phase circuits.

The power company will be glad to tell you what kind of current they will supply. Ask them for the voltage, the number of cycles and whether single, two or three-phase current. These motors will not operate on direct current or single phase alternating current.

All of the motors in this list are shipped from SOUTH-WESTERN OHIO.



The Rotor.

110 and 220-Volt Two and Three-Phase 60-Cycle Squirrel Cage Induction Motors.

Catalog No.	Horse-Power	Approx. Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Weight, Pounds	Price
			Size	Bore			Length	Width		
57H7820 $\frac{1}{3}$	$\frac{1}{2}$	1,135	3x2 $\frac{1}{2}$	11 $\frac{1}{16}$	12 $\frac{15}{16}$	10 $\frac{1}{4}$	12 $\frac{7}{8}$	8 $\frac{3}{4}$	85	\$ 64.00
57H7821 $\frac{1}{3}$	$\frac{3}{4}$	1,720	3x2 $\frac{1}{2}$	11 $\frac{1}{16}$	12 $\frac{15}{16}$	10 $\frac{1}{4}$	12 $\frac{7}{8}$	8 $\frac{3}{4}$	85	60.00
57H7822 $\frac{1}{3}$	$\frac{3}{4}$	1,135	3x2 $\frac{1}{2}$	11 $\frac{1}{16}$	12 $\frac{15}{16}$	10 $\frac{1}{4}$	12 $\frac{7}{8}$	8 $\frac{3}{4}$	100	70.00
57H7823 $\frac{1}{3}$	1	1,720	3x2 $\frac{1}{2}$	11 $\frac{1}{16}$	12 $\frac{15}{16}$	10 $\frac{1}{4}$	12 $\frac{7}{8}$	8 $\frac{3}{4}$	100	66.25
57H7824 $\frac{1}{3}$	1	1,140	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	15 $\frac{9}{16}$	11 $\frac{3}{4}$	14 $\frac{1}{2}$	9 $\frac{3}{8}$	120	76.25
57H7825 $\frac{1}{3}$	1 $\frac{1}{2}$	1,720	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	15 $\frac{9}{16}$	11 $\frac{3}{4}$	14 $\frac{1}{2}$	9 $\frac{3}{8}$	120	73.00
57H7826 $\frac{1}{3}$	1 $\frac{1}{2}$	1,140	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	15 $\frac{9}{16}$	11 $\frac{3}{4}$	14 $\frac{1}{2}$	9 $\frac{3}{8}$	130	84.50
57H7827 $\frac{1}{3}$	2	1,720	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	15 $\frac{9}{16}$	11 $\frac{3}{4}$	14 $\frac{1}{2}$	9 $\frac{3}{8}$	130	79.25
57H7828 $\frac{1}{3}$	2	1,140	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	16 $\frac{11}{16}$	13 $\frac{5}{8}$	16 $\frac{7}{8}$	11 $\frac{7}{8}$	210	93.00
57H7829 $\frac{1}{3}$	3	1,720	4x3 $\frac{1}{2}$	16 $\frac{1}{16}$	16 $\frac{11}{16}$	13 $\frac{5}{8}$	16 $\frac{7}{8}$	11 $\frac{7}{8}$	210	92.50
57H7830 $\frac{1}{3}$	3	1,140	6x4	13 $\frac{1}{16}$	18 $\frac{1}{2}$	17	19 $\frac{3}{4}$	13 $\frac{3}{4}$	280	113.00
57H7831 $\frac{1}{3}$	5	1,720	6x4	13 $\frac{1}{16}$	18 $\frac{1}{2}$	17	19 $\frac{3}{4}$	13 $\frac{3}{4}$	280	110.00
57H7832 $\frac{1}{3}$	5	1,140	6x4	13 $\frac{1}{16}$	20 $\frac{3}{16}$	18 $\frac{1}{8}$	19 $\frac{3}{4}$	13 $\frac{3}{4}$	320	142.50
57H7833 $\frac{1}{3}$	7 $\frac{1}{2}$	1,720	6x4	13 $\frac{1}{16}$	20 $\frac{3}{16}$	18 $\frac{1}{8}$	19 $\frac{3}{4}$	13 $\frac{3}{4}$	490	206.00
57H7834 $\frac{1}{3}$	7 $\frac{1}{2}$	1,140	7x5	13 $\frac{1}{16}$	24 $\frac{7}{8}$	18 $\frac{1}{4}$	19 $\frac{3}{4}$	13 $\frac{3}{4}$	545	240.00
57H7835 $\frac{1}{3}$	7 $\frac{1}{2}$	850	8x6	17 $\frac{1}{16}$	23 $\frac{1}{16}$	24 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	670	297.50
57H7836 $\frac{1}{3}$	10	1,750	7x5	17 $\frac{1}{16}$	24 $\frac{7}{8}$	18 $\frac{1}{4}$	19 $\frac{3}{4}$	13 $\frac{3}{4}$	570	239.00
57H7837 $\frac{1}{3}$	10	1,150	8x6	17 $\frac{1}{16}$	23 $\frac{1}{16}$	24 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	695	299.00
57H7838 $\frac{1}{3}$	10	850	9x7	11 $\frac{1}{16}$	26 $\frac{5}{8}$	25 $\frac{3}{8}$	26 $\frac{1}{2}$	17 $\frac{1}{2}$	915	326.00
57H7839 $\frac{1}{3}$	15	1,750	8x6	17 $\frac{1}{16}$	23 $\frac{1}{16}$	24 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	695	292.00
57H7840 $\frac{1}{3}$	15	1,150	9x7	11 $\frac{1}{16}$	26 $\frac{5}{8}$	25 $\frac{3}{8}$	26 $\frac{1}{2}$	17 $\frac{1}{2}$	955	340.00
57H7841 $\frac{1}{3}$	15	850	13x8 $\frac{3}{4}$	2 $\frac{3}{16}$	29 $\frac{3}{4}$	27 $\frac{1}{2}$	28 $\frac{3}{4}$	19 $\frac{3}{4}$	1,095	409.00
57H7842 $\frac{1}{3}$	20	1,750	9x7	11 $\frac{1}{16}$	26 $\frac{5}{8}$	25 $\frac{3}{8}$	26 $\frac{1}{2}$	17 $\frac{1}{2}$	1,050	354.00
57H7843 $\frac{1}{3}$	20	1,150	13x8 $\frac{3}{4}$	2 $\frac{3}{16}$	29 $\frac{3}{4}$	27 $\frac{1}{2}$	28 $\frac{3}{4}$	19 $\frac{3}{4}$	1,190	409.00
57H7844 $\frac{1}{3}$	20	850	13x8 $\frac{3}{4}$	2 $\frac{3}{16}$	29 $\frac{3}{4}$	27 $\frac{1}{2}$	28 $\frac{3}{4}$	19 $\frac{3}{4}$	1,340	464.00

Constant Speed Direct Current Motors

110 and 220-Volt Shunt Wound Type

The type of motors described on this page have been given the name of "Constant Speed" motors by the electrical trade, because there is very little change in the speed of the motors with changes in the loads. They are single speed motors. These direct current motors conform to the method of rating adopted by the American Institute of Electrical Engineers, and are in every way high grade machines.

Construction

All of the motors and generators listed on this page and pages 5, 6, 7 and 8 are made by one well known company manufacturing motors and generators only.

The frames of these motors are made of steel, giving a more compact and durable machine for a given output than would be practical with cast iron. The pole pieces for sizes up to 5 horse-power are steel with laminated tips. The larger sizes have laminated poles.

The armatures and commutators are particularly well designed. The commutator segments are made of hard drawn copper and are of sufficient number and size to insure sparkless running and low working temperature. These bars are of sufficient depth to give ample current carrying capacity even after years of service. The segments are insulated from each other and from the cast steel shell on which they are mounted by a carefully selected grade of mica.

Our brush holders are of the box type, simple in construction and thoroughly effective in operation. The brushes are high grade, self lubricating carbon, selected to give correct commutation. The commutators are sufficiently large to permit the use of large brushes, giving low current density. The brushes slide easily in the holders, correct pressure being secured by adjustable springs. A flexible, stranded copper "pig tail," fastened

securely in the brush and to the brush holder, carries the current. This does away with many of the commutator troubles found in machines depending on uncertain sliding or spring contacts.

The bearings for all of our motors and generators are of the ring oiled type. Although we do not wish to encourage neglect, we call your attention to the deep oil well on all our machines, which will hold enough oil for several weeks' run. These wells are fitted with drain cocks for removing the old oil.

Our Price List

The following price list covers only shunt wound 110 and 220-volt motors, because this type meets the usual requirements, and is, therefore, in greatest demand. The prices quoted on these motors include a cast iron sliding base (which permits the tightening of the belt), and a no-voltage release starting re-

sistance. The $\frac{1}{4}$ horse-power motor has slotted feet but no sliding base. We also furnish pulleys of the size indicated. The other dimensions given vary somewhat, and where accurate dimensions are required, as for setting base bolts in concrete, we suggest that you request certified dimensions. We will always furnish floor type motors, unless ceiling or wall mounting is requested.

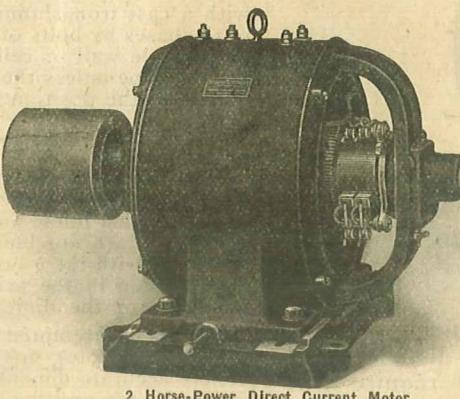
In ordering from the accompanying lists, or in asking for quotations, be sure to give the horse-power, voltage and speed required.

These motors are shipped from the factory in Southwestern Ohio.

All dimensions are given in inches and, in the case of pulleys, the diameter is always given first and the width of face next.

110 and 220-Volt Direct Current Shunt Motors

Catalog No.	Horse-Power	Approx. Full Load Speed	Pulley		Length of Shaft	Height of Motor	Size of Base		Approx. Shipping Weight, Pounds	Price
			Size	Bore			Length	Width		
57H7632 $\frac{1}{3}$	$\frac{1}{4}$	1,750	2 $\frac{1}{2}$ x2	$\frac{7}{16}$	11 $\frac{3}{4}$	7 $\frac{3}{8}$	5 $\frac{7}{8}$	65	\$ 39.00	
57H7633 $\frac{1}{3}$	$\frac{1}{2}$	1,750	3 x2 $\frac{1}{2}$	$\frac{9}{16}$	14 $\frac{1}{2}$	9 $\frac{3}{4}$	12 $\frac{3}{8}$	9	140	64.50
57H7634 $\frac{1}{3}$	$\frac{3}{4}$	1,300	3 x2 $\frac{1}{2}$	$\frac{11}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	79.50
57H7600 $\frac{1}{3}$	1	1,750	3 x2 $\frac{1}{2}$	$\frac{11}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	79.50
57H7601 $\frac{1}{3}$	1	850	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7602 $\frac{1}{3}$	$\frac{1}{2}$	1,300	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7603 $\frac{1}{3}$	2	1,750	4 x3 $\frac{1}{2}$	$\frac{15}{16}$	22 $\frac{3}{8}$	15 $\frac{1}{2}$	16	12 $\frac{1}{8}$	225	101.50
57H7604 $\frac{1}{3}$	2	1,000	5 x3 $\frac{1}{2}$	$\frac{15}{16}$	25 $\frac{1}{2}$	20 $\frac{3}{8}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	420	144.50
57H7607 $\frac{1}{3}$	3	1,500	5 x3 $\frac{1}{2}$	$\frac{15}{16}$	25 $\frac{1}{2}$	20 $\frac{3}{8}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	420	146.00
57H7610 $\frac{1}{3}$	5	1,300	6 x4	$\frac{15}{16}$	27	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	630	203.00
57H7611 $\frac{1}{3}$	5	850	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	735	301.00
57H7613 $\frac{1}{3}$	$\frac{7}{2}$	1,150	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	740	297.00
57H7614 $\frac{1}{3}$	$\frac{7}{2}$	825	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	329.00
57H7615 $\frac{1}{3}$	$\frac{7}{2}$	575	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,190	390.00
57H7617 $\frac{1}{3}$	10	1,750	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	750	310.00
57H7618 $\frac{1}{3}$	10	1,150	8 x5 $\frac{1}{2}$	$\frac{17}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	338.00
57H7619 $\frac{1}{3}$	10	760	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,190	384.00
57H7622 $\frac{1}{3}$	15	1,150	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	38	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,200	391.00
57H7623 $\frac{1}{3}$	15	750	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,575	510.00
57H7624 $\frac{1}{3}$	15	525	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,825	645.00
57H7626 $\frac{1}{3}$	$17\frac{1}{2}$	425	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{8}$	36	21 $\frac{3}{4}$	2,250	834.00
57H7629 $\frac{1}{3}$	20	960	10 x7 $\frac{3}{4}$	$\frac{15}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,600	512.00
57H7630 $\frac{1}{3}$	20	715	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,875	634.00
57H7631 $\frac{1}{3}$	20	480	13 x8 $\frac{3}{4}$	$\frac{23}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{8}$	36	21 $\frac{3}{4}$	2,275	845.00



2 Horse-Power Direct Current Motor.

Adjustable Speed Direct Current Motors

110 and 220-Volt, Commutating Pole Type

Adjustable speed motors are motors having a means of changing the speeds between certain limits. When they are set, they run at nearly constant speed, regardless of the amount of work being done.

The commutating pole type motor is peculiarly adapted to machine tool, printing press and similar work, because of the wide range of speed that can be obtained and the ease with which changes of speed are made. Speed variations as great as one-fourth to full speed can be obtained without the necessity of shifting belts or changing gear, and the only time that is required to make the change is the time it takes to throw the controlling lever to the proper position for the speed desired. When the lever is set the motor will run with almost constant speed, regardless of load. By using reversing controllers, commutating pole motors can be made to rotate in either direction at will.

Our price lists cover 110 and 220-volt direct current motors with pulleys, sliding bases and box type non-reversible controllers which serve both as starters and speed regulators. They are equipped with no-voltage release to cut the motor off the line in case the current fails.

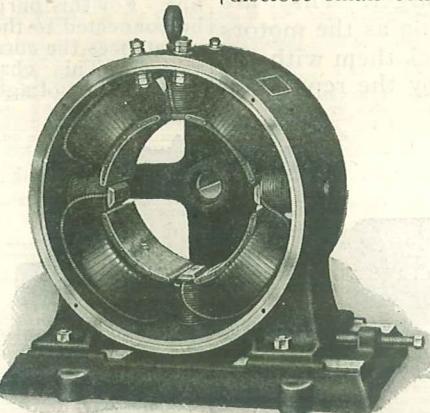
The following lists show motors having a speed variation of 1 to 2 and of 1 to 4. We can also quote prices on motors having a speed variation of 1 to 3.

We call attention to our method of rating. The horse-power rating for all day service is given in the column marked 10 hr. When the motors are used only intermittently they will stand

Construction.

An inspection of the accompanying illustration will disclose small commutating poles (sometimes called interpoles) midway between the main field poles. The purpose of these commutating poles is much involved with technical explanations. It may be said, however, that for the classes of work mentioned to the left, a higher efficiency and less heating of the commutator are obtained by the use of the commutating pole than can be obtained with the best shunt or compound motors operated under these conditions. Moreover, destructive sparking is entirely eliminated.

In other details of construction the parts, such as armatures, commutators, brush holders, bearings, etc., are exactly the same as in our shunt wound motors on the preceding page.



Fields and Frame of Interpole Motor.

Our Price Lists.

much heavier loads as indicated by the horse-powers given in the 2 hr. column. The controllers which we furnish are designed for the heavier starting duty.

We give some approximate dimensions for the convenience of our customers. All dimensions are in inches and, in the case of pulleys, the diameter is first and width of face next.

In ordering be sure to state the voltage of the current supplied you, and to select the proper motor for the range of speed which you require.

All of these motors and starters are shipped from SOUTH-WESTERN OHIO.

110 and 220-Volt Direct Current Adjustable Speed Motors.

Field Control—Commutation Pole—Speed Variation 1 to 2.

Catalog No.	Horse-Power		Speed		Pulley	Length of Shaft	Height of Motor	Size of Base	Approx. Shpg. Wt., Lbs.	Price		
	10 hr.	2 hr.	Min.	Max.	Size							
57H7650 $\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{2}$	415	830	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	\$ 107.00
57H7651 $\frac{1}{3}$	$\frac{1}{3}$	$\frac{2}{3}$	625	1,250	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	107.00
57H7652 $\frac{2}{3}$	$\frac{1}{2}$	$\frac{2}{3}$	850	1,700	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	150	107.00
57H7653 $\frac{3}{4}$	$\frac{1}{2}$	$\frac{3}{8}$	415	830	4x $3\frac{1}{2}$	$15\frac{1}{16}$	22 $\frac{5}{16}$	15 $\frac{3}{8}$	16	12 $\frac{7}{8}$	235	134.00
57H7654 $\frac{4}{5}$	$\frac{3}{4}$	1	1,300	2,600	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	150	108.25
57H7655 $\frac{5}{6}$	1	$\frac{1}{4}$	850	1,700	4x $3\frac{1}{2}$	$15\frac{1}{16}$	22 $\frac{5}{16}$	15 $\frac{3}{8}$	16	12 $\frac{7}{8}$	235	131.00
57H7658 $\frac{1}{2}$	$\frac{1}{2}$	2	1,300	2,600	4x $3\frac{1}{2}$	$15\frac{1}{16}$	22 $\frac{5}{16}$	15 $\frac{3}{8}$	16	12 $\frac{7}{8}$	235	131.00
57H7660 $\frac{1}{3}$	2	$\frac{1}{2}$	1,000	2,000	5x $3\frac{1}{2}$	$15\frac{1}{16}$	25 $\frac{1}{2}$	20 $\frac{1}{4}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	425	161.25
57H7661 $\frac{1}{3}$	$\frac{1}{2}$	3	650	1,300	6x4	$13\frac{1}{16}$	27	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	650	215.15
57H7662 $\frac{2}{3}$	$\frac{3}{4}$	5	910	1,820	6x4	$13\frac{1}{16}$	27	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	650	215.15
57H7664 $\frac{1}{3}$	5	$\frac{1}{2}$	875	1,750	8x $5\frac{1}{2}$	$17\frac{1}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	750	273.30
57H7665 $\frac{1}{3}$	5	$\frac{1}{2}$	550	1,100	8x $5\frac{1}{2}$	$17\frac{1}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	875	346.50
57H7666 $\frac{1}{3}$	7 $\frac{1}{2}$	10	825	1,650	8x $5\frac{1}{2}$	$17\frac{1}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	875	353.00
57H7667 $\frac{1}{3}$	7 $\frac{1}{2}$	10	575	1,150	10x $7\frac{3}{4}$	$11\frac{1}{16}$	37 $\frac{1}{16}$	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,200	417.00
57H7668 $\frac{1}{3}$	7 $\frac{1}{2}$	10	375	750	10x $7\frac{3}{4}$	$11\frac{1}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,575	532.00
57H7669 $\frac{1}{3}$	10	12 $\frac{1}{2}$	760	1,520	10x $7\frac{3}{4}$	$11\frac{1}{16}$	37 $\frac{1}{16}$	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,200	426.00
57H7670 $\frac{1}{3}$	10	12 $\frac{1}{2}$	475	950	10x $7\frac{3}{4}$	$11\frac{1}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,600	543.50
57H7671 $\frac{1}{3}$	10	12 $\frac{1}{2}$	350	700	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,875	654.00
57H7672 $\frac{1}{3}$	12 $\frac{1}{2}$	15	435	870	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,875	689.00
57H7674 $\frac{1}{3}$	15	17 $\frac{1}{2}$	750	1,500	10x $7\frac{3}{4}$	$11\frac{1}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,600	666.50
57H7675 $\frac{1}{3}$	15	17 $\frac{1}{2}$	525	1,050	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,900	695.00
57H7676 $\frac{1}{3}$	15	17 $\frac{1}{2}$	375	750	13x $8\frac{3}{4}$	$23\frac{1}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{2}$	36	21 $\frac{3}{4}$	2,300	795.00
57H7677 $\frac{1}{3}$	17 $\frac{1}{2}$	20	425	850	13x $8\frac{3}{4}$	$23\frac{1}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{2}$	36	21 $\frac{3}{4}$	2,300	797.50
57H7679 $\frac{1}{3}$	20	25	715	1,430	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,900	777.00
57H7680 $\frac{1}{3}$	20	25	480	960	13x $8\frac{3}{4}$	$23\frac{1}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{2}$	36	21 $\frac{3}{4}$	2,300	899.00
57H7681 $\frac{1}{3}$	20	25	400	800	16x11	$27\frac{1}{16}$	46 $\frac{1}{16}$	39 $\frac{3}{8}$	21	2,825	1,058.00	
57H7682 $\frac{1}{3}$	20	25	325	650	16x11	$27\frac{1}{16}$	48 $\frac{3}{16}$	40 $\frac{1}{4}$	22	3,225	1,192.00	

110 and 220-Volt Direct Current Adjustable Speed Motors.

Field Control—Commutation Pole—Speed Variation 1 to 4.

Catalog No.	Horse-Power		Speed		Pulley	Length of Shaft	Height of Motor	Size of Base	Approx. Shpg. Wt., Lbs.	Price		
	10 hr.	2 hr.	Min.	Max.	Size							
57H7690 $\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{2}$	415	1,660	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	\$ 114.90
57H7691 $\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{2}$	625	2,500	3x $2\frac{1}{2}$	$11\frac{1}{16}$	19 $\frac{3}{8}$	10 $\frac{3}{8}$	13	10 $\frac{1}{4}$	140	115.00
57H7692 $\frac{1}{3}$	$\frac{1}{2}$	$\frac{5}{8}$	415	1,660	4x $3\frac{1}{2}$	$15\frac{1}{16}$	22 $\frac{5}{16}$	15 $\frac{3}{8}$	16	12 $\frac{7}{8}$	235	139.00
57H7693 $\frac{1}{3}$	$\frac{3}{4}$	1	625	2,500	4x $3\frac{1}{2}$	$15\frac{1}{16}$	22 $\frac{5}{16}$	15 $\frac{3}{8}$	16	12 $\frac{7}{8}$	235	140.00
57H7694 $\frac{1}{3}$	1	$\frac{1}{4}$	500	2,000	5x $3\frac{1}{2}$	$15\frac{1}{16}$	25 $\frac{1}{16}$	20 $\frac{1}{4}$	18 $\frac{3}{8}$	14 $\frac{3}{4}$	425	174.60
57H7695 $\frac{1}{3}$	$\frac{1}{4}$	$\frac{1}{2}$	310	1,240	6x4	$13\frac{1}{16}$	26 $\frac{1}{16}$	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	630	224.00
57H7696 $\frac{1}{3}$	$\frac{1}{3}$	2	450	1,800	6x4	$13\frac{1}{16}$	26 $\frac{1}{16}$	23 $\frac{3}{4}$	22 $\frac{1}{8}$	15 $\frac{1}{4}$	630	224.00
57H7697 $\frac{1}{3}$	$\frac{1}{2}$	3	425	1,700	8x $5\frac{1}{2}$	$17\frac{1}{16}$	30 $\frac{5}{8}$	24 $\frac{1}{4}$	22 $\frac{1}{2}$	13 $\frac{1}{2}$	725	283.50
57H7698 $\frac{1}{3}$	$\frac{1}{2}$	3	260	1,040	8x $5\frac{1}{2}$	$17\frac{1}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	355.00
57H7699 $\frac{1}{3}$	5	$\frac{1}{2}$	550	2,200	8x $5\frac{1}{2}$	$17\frac{1}{16}$	33 $\frac{1}{4}$	26 $\frac{1}{2}$	25 $\frac{3}{8}$	16 $\frac{1}{2}$	870	360.50
57H7700 $\frac{1}{3}$	5	$\frac{1}{2}$	375	1,500	10x $7\frac{3}{4}$	$11\frac{1}{16}$	37 $\frac{1}{16}$	28 $\frac{3}{4}$	28 $\frac{1}{8}$	19 $\frac{3}{4}$	1,190	430.50
57H7701 $\frac{1}{3}$	7 $\frac{1}{2}$	10	375	1,500	10x $7\frac{3}{4}$	$11\frac{1}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,575	549.00
57H7702 $\frac{1}{3}$	10	12 $\frac{1}{2}$	475	1,900	10x $7\frac{3}{4}$	$11\frac{1}{16}$	35 $\frac{7}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	18 $\frac{5}{8}$	1,575	593.00
57H7703 $\frac{1}{3}$	10	12 $\frac{1}{2}$	350	1,400	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,825	709.00
57H7704 $\frac{1}{3}$	12 $\frac{1}{2}$	15	435	1,740	13x $8\frac{3}{4}$	$23\frac{1}{16}$	42 $\frac{3}{8}$	33 $\frac{1}{4}$	32 $\frac{1}{8}$	20 $\frac{7}{8}$	1,825	725.00
57H7705 $\frac{1}{3}$	15	17 $\frac{1}{2}$	375	1,500	13x $8\frac{3}{4}$	$23\frac{1}{16}$	45 $\frac{5}{8}$	37 $\frac{1}{2}$	36	21 $\frac{3}{4}$	2,250	832.50
57H7706 $\frac{1}{3}$	15	17 $\frac{1}{2}$	300	1,200	16x11	$27\frac{1}{16}$	46 $\frac{1}{16}$	39 $\frac{3}{8}$	21	2,750	981.00	
57H7707 $\frac{1}{3}$	15	17 $\frac{1}{2}$	225	900	16x11	$27\frac{1}{16}$	48 $\frac{3}{16}$	40 $\frac{1}{4}$	22	3,150	1,109.00	
57H7708 $\frac{1}{3}$	17 $\frac{1}{2}$	20	350	1,400	16x11	$27\frac{1}{16}$	46 $\frac{1}{16}$	39 $\frac{3}{8}$	21	2,750	982.00	
57H7709 $\frac{1}{3}$	20	25	250	1,000	16x11	$27\frac{1}{16}$	48 $\frac{3}{16}$	40 $\frac{1}{4}$	22	3,150	1,108.00	
57H7710 $\frac{1}{3}$	20	25	325	1,300	16x11	$27\frac{1}{16}$	48 $\frac{3}{16}$	40 $\frac{1}{4}$	22	3,150	1,234.00	
57H7711 $\frac{1}{3}$	20	25	250	1,000	20x14	$27\frac{1}{16}$	52 $\frac{5}{8}$	43 $\frac{7}{8}$	29	3,725	1,367.00</td	

Direct Current Generators

125 and 250-Volt, 2-Wire, Compound Wound.

Our direct current generators are built by the same company that makes our direct current motors of 1 horse-power and larger. They are of the same high grade construction as the motors described on pages 5 to 7. We back them with our guarantee and feel well assured by the reputation and years of experience of the manufacturers that these generators will in every way give satisfactory service.

Operation

There is practically no difference between direct current dynamo electric machinery built for motors and for generators, aside from the angle of location of the brushes for good commutation. Changing any direct current motor to a generator is a comparatively simple process. However, only the shunt and compound wound machines are used to any extent at the present time, because only in these types can the voltage be maintained practically constant independently of the load connected to the generator. The necessity for maintaining a nearly constant voltage on lighting circuits will be appreciated when it is stated that the amount of light given by the ordinary tungsten lamp varies with the voltage, but is very much out of proportion to it, changing approximately as the square of the voltage. Therefore, it is very desirable to keep the voltage up to the rating of the lamps. On the other hand, the voltage should not rise greatly over the rating of the lamps, because this shortens their life.

We supply compound wound generators unless shunt machines are ordered for use with storage batteries.

Field Rheostats

While it is highly advantageous to have the voltage of a generator remain nearly constant, it is just as desirable

to have the voltage adjustable within limits to allow for speed variations of the driving engine, and to permit adjustment to the pressure losses in various lengths of line. For this purpose we furnish resistance rheostats to be connected to the fields. By the manipulation of these resistances the current through the field windings may be varied. This changes the magnetization and consequently the voltage of the machine.

Mechanical Details

The same high grade materials and workmanship are characteristic of both our motors and generators. The bearings are of the same large ring oiled type. The construction of the motor and generator armatures are identical.

These machines are supplied with cast iron sliding bases and an adjusting screw to take up the slack of the belt.

Our Price Lists

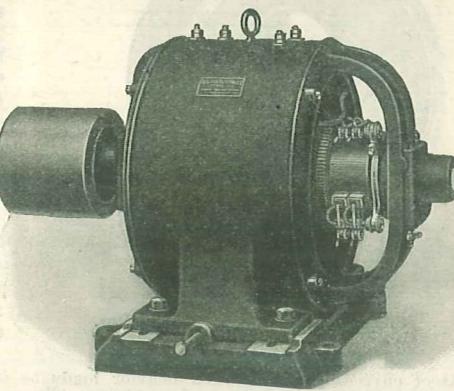
Our price lists cover two-wire compound wound generators for 125 and 250 volts at the full rated load and speed, allowing a sufficient margin over the usual 110 and 220 circuit voltages to permit a considerable departure from the rated speed and an appreciable line drop. Field rheostats of "front of board" type are included with generators of 5 K. W. and less. For 7½ K. W. and larger generators "back of the board" rheostats are furnished.

All dimensions given in table are in inches and, in the case of pulleys, the diameter is always given first and the width of the face next. The frame dimensions given are not all exact, due to the variations in castings, etc. When accurate dimensions are required we suggest that you request a certified dimension sheet on the size of generator in which you are interested.

The column headed "Lamps" gives the number of 17-candle power, 20-watt lamps, equivalent to just full load capacity of the generators.

These generators are shipped from the factory in SOUTHWESTERN OHIO.

Direct Current Generators 125 and 250-Volt, 2-Wire, Compound Wound.



Catalog No.	K. W.	Lamps	Speed R. P. M.	Pulley		Length of Shaft	Height of Generator	Size of Base		Approx. Shipping Wt., Lbs.	Price
				Size	Shaft			Length	Width		
57H7850 ¹ / ₃	1/4	13	1,300	3x2 ¹ / ₂	9 ¹ / ₁₆	14 ⁷ / ₁₆	9 ³ / ₄	12 ³ / ₈	9	90	\$ 60.90
57H7851 ¹ / ₃	3/8	17	1,800	3x2 ¹ / ₂	9 ¹ / ₁₆	14 ⁷ / ₁₆	9 ³ / ₄	12 ³ / ₈	9	90	61.00
57H7852 ¹ / ₃	1/2	25	2,500	3x2 ¹ / ₂	9 ¹ / ₁₆	14 ⁷ / ₁₆	9 ³ / ₄	12 ³ / ₈	9	90	61.00
57H7853 ¹ / ₃	1/2	25	1,150	3x2 ¹ / ₂	11 ¹ / ₁₆	19 ³ / ₈	10 ³ / ₈	13	10 ¹ / ₄	140	79.60
57H7854 ¹ / ₃	3/4	38	1,550	3x2 ¹ / ₂	11 ¹ / ₁₆	19 ³ / ₈	10 ³ / ₈	13	10 ¹ / ₄	140	79.60
57H7855 ¹ / ₃	1	50	2,250	3x2 ¹ / ₂	11 ¹ / ₁₆	19 ³ / ₈	10 ³ / ₈	13	10 ¹ / ₄	140	79.60
57H7856 ¹ / ₃	1	50	1,050	4x3 ¹ / ₂	15 ¹ / ₁₆	22 ⁵ / ₁₆	15 ¹ / ₂	16	12 ¹ / ₈	225	101.50
57H7857 ¹ / ₃	1 ¹ / ₂	75	1,550	4x3 ¹ / ₂	15 ¹ / ₁₆	22 ⁵ / ₁₆	15 ¹ / ₂	16	12 ¹ / ₈	225	101.50
57H7858 ¹ / ₃	1 ¹ / ₂	75	950	5x3 ¹ / ₂	15 ¹ / ₁₆	25 ⁷ / ₁₆	20 ¹ / ₄	18 ³ / ₈	14 ³ / ₄	410	140.50
57H7859 ¹ / ₃	2	100	2,050	4x3 ¹ / ₂	15 ¹ / ₁₆	22 ⁵ / ₁₆	15 ¹ / ₂	16	12 ¹ / ₈	225	101.50
57H7860 ¹ / ₃	2	100	1,200	5x3 ¹ / ₂	15 ¹ / ₁₆	25 ⁷ / ₁₆	20 ¹ / ₄	18 ³ / ₈	14 ³ / ₄	410	140.50
57H7861 ¹ / ₃	2 ¹ / ₂	125	775	6x4	1 ³ / ₁₆	26 ¹⁵ / ₁₆	23 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	620	197.00
57H7862 ¹ / ₃	3	150	1,850	5x3 ¹ / ₂	15 ¹ / ₁₆	25 ⁷ / ₁₆	20 ¹ / ₄	18 ³ / ₈	14 ³ / ₄	410	144.00
57H7863 ¹ / ₃	3	150	1,150	6x4	1 ³ / ₁₆	26 ¹⁵ / ₁₆	23 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	620	197.00
57H7864 ¹ / ₃	3 ¹ / ₂	175	725	8x5 ¹ / ₂	17 ¹ / ₁₆	30 ⁵ / ₈	24 ¹ / ₄	22 ¹ / ₂	13 ¹ / ₂	725	279.00
57H7865 ¹ / ₃	5	250	1,525	6x4	1 ³ / ₁₆	26 ¹⁵ / ₁₆	23 ³ / ₄	22 ¹ / ₈	15 ¹ / ₄	620	197.00
57H7866 ¹ / ₃	5	250	1,000	8x5 ¹ / ₂	17 ¹ / ₁₆	30 ⁵ / ₈	24 ¹ / ₄	22 ¹ / ₂	13 ¹ / ₂	725	287.00
57H7867 ¹ / ₃	5	250	725	8x5 ¹ / ₂	17 ¹ / ₁₆	33 ¹ / ₄	26 ¹ / ₂	25 ³ / ₈	16 ¹ / ₂	850	331.00
57H7868 ¹ / ₃	7 ¹ / ₂	375	1,350	8x5 ¹ / ₂	17 ¹ / ₁₆	30 ⁵ / ₈	24 ¹ / ₄	22 ¹ / ₂	13 ¹ / ₂	725	287.00
57H7869 ¹ / ₃	7 ¹ / ₂	375	1,050	8x5 ¹ / ₂	17 ¹ / ₁₆	33 ¹ / ₄	26 ¹ / ₂	25 ³ / ₈	16 ¹ / ₂	850	316.00
57H7870 ¹ / ₃	7 ¹ / ₂	375	650	10x7 ³ / ₄	11 ⁵ / ₁₆	37 ¹⁵ / ₁₆	28 ³ / ₄	28 ¹ / ₈	19 ³ / ₄	1,175	390.00
57H7871 ¹ / ₃	10	500	1,450	8x5 ¹ / ₂	17 ¹ / ₁₆	33 ¹ / ₄	26 ¹ / ₂	25 ³ / ₈	16 ¹ / ₂	850	316.00
57H7872 ¹ / ₃	10	500	950	10x7 ³ / ₄	11 ⁵ / ₁₆	37 ¹⁵ / ₁₆	28 ³ / ₄	28 ¹ / ₁₆	19 ³ / ₄	1,175	382.00
57H7873 ¹ / ₃	10	500	600	10x7 ³ / ₄	11 ⁵ / ₁₆	35 ⁷ / ₈	33 ¹ / ₄	32 ¹ / ₈	18 ⁵ / ₈	1,575	505.00
57H7874 ¹ / ₃	12 ¹ / ₂	625	515	13x8 ³ / ₄	2 ³ / ₁₆	42 ³ / ₈	33 ¹ / ₄	32 ¹ / ₈	20 ⁷ / ₈	1,825	629.00
57H7875 ¹ / ₃	15	750	1,300	10x7 ³ / ₄	11 ⁵ / ₁₆	37 ¹⁵ / ₁₆	28 ³ / ₄	28 ¹ / ₁₆	19 ³ / ₄	1,175	382.00
57H7876 ¹ / ₃	15	750	900	10x7 ³ / ₄	11 ⁵ / ₁₆	35 ⁷ / ₈	33 ¹ / ₄	32 ¹ / ₈	18 ⁵ / ₈	1,575	481.00
57H7877 ¹ / ₃	15	750	640	13x8 ³ / ₄	2 ³ / ₁₆	42 ³ / ₈	33 ¹ / ₄	32 ¹ / ₈	20 ⁷ / ₈	1,825	629.00

Read About Our Electric Lighting Plants

WE CAN SAVE YOU MONEY

If you had one of our Electric Plants on your place you could have clean, safe lights in every room, in halls, basement, and all the closets. You could have a light at the gate, and convenient lights in every outbuilding, especially in barn and barnyard. You could also have an electric suction cleaner, fans, motors and motor driven machines, electric irons, etc.

Write for our free catalog No. E57, called Electric Light and Power for Country Homes, describing in plain language how an electric plant is built and rated, and exactly how to figure a plant for your own place. You will be glad to have the book, if only for the information in it. And it gives full descriptions and prices of nineteen different plants, one as low as \$83.35. All are fully guaranteed and our low prices will be a pleasant surprise. Write for the Catalog No. E57 today, before you forget.

A Plant for Only \$83.35.

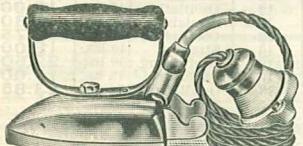
This high grade little plant is built to fit the needs of those who ordinarily burn just two or three lamps at one time. The battery alone will light three 13-candle power 15-watt lamps four hours a night for four nights on one full charge. Or it will light two such lamps three hours a night for eight nights on one full charge. And the generator alone will light twelve such lamps as long as run. Put up as many lights as you wish, but do not burn all at one time.

Plant comes complete, as shown in picture. No trouble to set up (we send full directions). $\frac{1}{2}$ horse-power required to run generator. Use your own engine only a few hours a week.

No. 57H202½ Electric Plant with $5\frac{1}{2}$ -ampere 42-volt generator, 24-ampere hour 15-cell guaranteed enclosed battery, switchboard, belt, hydrometer and ten Mazda 13-candle power 15-watt lamps. Weight, about 200 pounds. Price, complete.....\$83.35

If you think you will need a larger plant write for our Electric Plant Catalog No. E57, sent free on request. Describes nineteen different electric plants.

"Lovolt" Electric Irons.



For low voltage circuits only. Saves many steps and keeps the rooms cool on ironing day. Exceptionally well made and nicely nickel plated. As it may be tilted up on end when not in use, it requires no stand. We furnish a special attachment plug for separate circuit which should be installed for the iron. Shipping weight, 7 pounds.

No. 57H5171 "LOVOLT" Electric Iron for 32 volts, consumes about 16 amperes. Complete with 5 feet 6 inches of cord and special plug. Price.....\$4.25

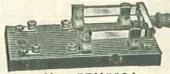
No. 57H5172 "LOVOLT" Electric Iron for 60 volts, consumes about 8 amperes. Complete with 5 feet 6 inches of cord and special plug. Price.....\$4.25

Good Quality.

Slate bases, front connections and are for circuits of 250 volts, or less. direct current or alternating current.



No. 5/5892



No. 57H5894



No. 57H5884



No. 57H5888



No. 57H5904

Single Pole, Single Throw, Not Fused. **No. 57H5880** 30-ampere. Shipping weight, 1 lb. Price, each...\$3.50

No. 57H5881 60-ampere. Shipping weight, 1 lb. Price, each...\$5.70

Single Pole, Double Throw, Not Fused. **No. 57H5882** 30-ampere. Shipping wt., $1\frac{1}{2}$ lbs. Price, each...\$6.00

No. 57H5883 60-ampere. Shipping wt., $1\frac{1}{2}$ lbs. Price, each...\$9.75

Double Pole, Single Throw, Not Fused. **No. 57H5884** 30-ampere. Shipping weight, 1 lb. Price, each...\$5.40

No. 57H5885 60-ampere. Shipping weight, 2 lbs. Price, each...\$9.20

Double Pole, Double Throw, Not Fused. **No. 57H5886** 30-ampere. Shipping wt., $2\frac{1}{2}$ lbs. Price, each...\$8.60

No. 57H5887 60-ampere. Shipping wt., $2\frac{1}{2}$ lbs. Price, each...\$14.45

Three-Pole, Single Throw, Not Fused. **No. 57H5888** 30-Ampere. Shipping wt., $2\frac{1}{4}$ lbs. Price, each...\$7.75

No. 57H5889 60-ampere. Shipping wt., $2\frac{1}{4}$ lbs. Price, each...\$1.34

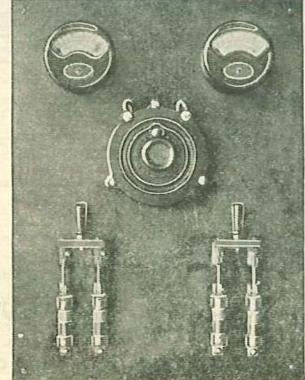
Switchboard.

We are in a position to furnish switchboard panels when desired, and will be pleased to quote prices if you will tell us the equipment you would like.

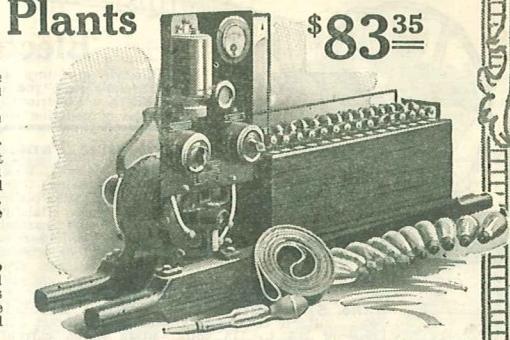
Our standard switchboard panel has a voltmeter, ammeter and two double pole fused switches mounted upon it. The board is made of transite ebony asbestos, is strong and light, and is fitted with iron brackets for wall mounting. When the switchboard is ordered with the generator we will mount the field rheostat on the panel, as shown, if you wish it.

The voltmeters and ammeters are the same as those shown to the right. It will be necessary for you to specify the scales you wish, except when ordered with a generator, also tell us how you want to use the switches. About five days required to ship.

No. 57H7879½ Switchboard, complete with ammeter, voltmeter, two 60-ampere switches and wall brackets. Shipping wt., about 95 pounds. Price.....\$26.50



Direct Current Voltmeters and Ammeters.



\$83³⁵

"Lovolt" Electric Fans.

Enjoy a refreshing breeze on hot days and nights. You can attach a "LOVOLT" fan to any low voltage lighting socket. Well made, carefully finished, and guaranteed to please you. Motor and frame finished in black enamel; fan in polished brass. Designed to operate on low voltage circuits only.

No. 57H6232 8-Inch Four-Blade "LOVOLT" Electric Fan for 32 volts, consumes about $\frac{1}{2}$ ampere. Complete with 6 feet of cord and plug. Shipping weight, about 13 pounds. Price.....\$11.00

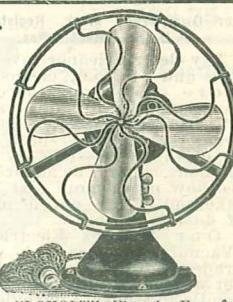
No. 57H6233 8-Inch Four-Blade "LOVOLT" Electric Fan for 60 volts, consumes about $\frac{1}{2}$ ampere. Complete with 6 feet of cord and plug. Shipping weight, about 13 pounds. Price.....\$11.00

No. 57H6234 12-Inch Four-Blade "LOVOLT" Electric Fan for 32 volts, consumes about 2 amperes. Complete with 6 feet of cord and plug. Shipping weight, about 27 pounds. Price.....\$15.00

No. 57H6235 12-Inch Four-Blade "LOVOLT" Electric Fan for 60 volts, consumes about 1 ampere. Complete with 6 feet of cord and plug. Shipping weight, about 27 pounds. Price.....\$15.00

No. 57H6236 12-Inch Four-Blade Oscillating "LOVOLT" Fan for 32 volts, consumes about 2 amperes. Complete with 10 feet of cord and plug. Shipping weight, about 40 pounds. Price.....\$19.00

No. 57H6237 12-Inch Four-Blade Oscillating "LOVOLT" Fan for 60 volts, consumes about 1 ampere. Complete with 10 feet of cord and plug. Shipping weight, about 40 pounds. Price.....\$19.00



Battery Hydrometers.

No. 57H6157 Syringe Hydrometer for enclosed batteries. Used to test gravity of storage batteries. Shipping weight, 10 ounces. Price, each.....\$5.50

No. 57H6162 Flat Body Hydrometer for open glass jar batteries. Shipping weight, 4 ounces. Price, each.....\$5.60

Cartridge Fuses.

Size, $\frac{1}{8} \times 2$ inches. Shipping weight, each, $\frac{1}{16}$ ounces.

No. 57H6186 5-ampere. **No. 57H6189** 20-ampere. **No. 57H6187** 10-ampere. **No. 57H6190** 25-ampere. **No. 57H6188** 15-ampere. **No. 57H6192** 30-ampere.

Price, 10 for \$85; each.....\$9.00

Size, $\frac{1}{16} \times 3$ inches. Shipping weight, each, 3 ounces.

No. 57H6194 35-ampere. **No. 57H6197** 50-ampere. **No. 57H6195** 40-ampere. **No. 57H6198** 55-ampere. **No. 57H6196** 45-ampere. **No. 57H6199** 60-ampere.

Price, 10 for \$1.25; each.....\$1.30

Open Link Fuses.

Length of centers, $1\frac{1}{2}$ inches. Shipping weight, 6 oz.

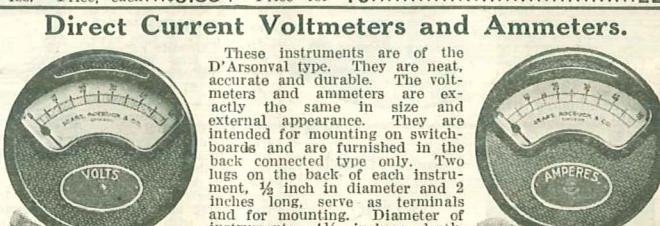
No. 57H6167 5-ampere. **No. 57H6170** 20-ampere. **No. 57H6168** 10-ampere. **No. 57H6171** 25-ampere. **No. 57H6169** 15-ampere. **No. 57H6172** 30-ampere.

Price for 10.....\$1.60

Length of centers, 3 inches. Shipping weight, 10 oz.

No. 57H6173 35-ampere. **No. 57H6176** 50-ampere. **No. 57H6174** 40-ampere. **No. 57H6177** 55-ampere. **No. 57H6175** 45-ampere. **No. 57H6178** 60-ampere.

Price for 10.....\$2.20



VOLTMETERS			AMMETERS		
Catalog No.	Range in Volts	Price	Catalog No.	Range in Amperes	Price
57H7830	0-50	\$ 8.00	57H7890	0-25	\$ 8.00
57H7831	0-80	\$ 8.25	57H7891	0-50	\$ 8.25
57H7882	0-150	\$ 8.50	57H7892	0-100	\$ 8.50
57H7883	0-300	\$10.50	57H7893	0-150	\$10.50

Electric Fans, Cleaners and Motors

Electric machines are clean, convenient, healthful, economical and cost only for actual work done. Electric fans keep you cool in Summer and circulate the warm air in Winter. Useful the year around. Our Energex Electric Cleaner sweeps and cleans much more thoroughly in less time. Save yourself the weariness of pedaling your sewing machine. Let our little motor run it for you.

Menominee Electric Fans.

Made with highly efficient motors. Shaft turned from steel. Bronze bearings fitted with compression grease cups. Fan blades and guard of lacquered brass. Balance of machine finished in black enamel. Made with swivel and trunion base so they may either be set upright or screwed against wall, etc., like a bracket. The 8-inch fan has three speeds and the 12-inch four speeds.

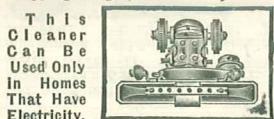
No. 57H6220 Menominee 8-Inch Electric Fan, suitable for either alternating or direct current of 105 to 115 volts. State which current. Shipping weight, 13 pounds. Price.....\$8.25
No. 57H6221 Menominee 12-Inch Electric Fan, complete, suitable only for alternating current of 105 to 115 volts. Shipping weight, 32 pounds. Price.....\$10.50

Energex Electric Suction Cleaner.

Our Own Trade Mark, Registered in U. S. Patent Office.

Any electric cleaner saves both time and labor; cleans much more quickly and thoroughly than ordinary broom or sweeper. Run an electric cleaner in a room that has just been swept as clean as possible by other methods. You'll be surprised to see how much more dirt it will take out. And not a particle of dust is raised.

Our Energex Electric Suction (Vacuum) Cleaner is a very high grade machine. Body made of steel, yet weighs only 12 pounds; easy to handle and move. Convenient switch in end of handle. Nozzle, 12 inches wide, has brush which loosens ravellings, threads, etc. Adjustable to thick or thin carpets. Body only 6½ inches high easily gets under chairs and tables. Handle 44 inches long. Machine holds itself upright when not in use. Bag easily emptied. 21 feet 6 inches of electric cord furnished. Simple to apply attachments if wished. All the parts are of high grade material, carefully tested and inspected. Steel body has polished nickel plated and blue enamel finish. A high quality machine, equal to any sold elsewhere for at least one-third more. We will take it back at our expense if you are not more than pleased. Shipping weight, about 17 pounds.



No. 57H7510 Energex Suction Cleaner for usual city alternating current of 105 to 115 volts. Price, complete.....\$19.50

No. 57H7511 Energex Suction Cleaner for 30 to 32-volt private lighting plant current. Price.....\$20.00

Upright Portable Heater.

No. 57H5236 Especially adapted to heating small rooms, nurseries, bathrooms, offices, etc. Removes the chill and dampness when the fire is low, or when the weather during the day does not justify keeping up a fire.

It consists of a single heat unit mounted in a reflecting bell supported by a vertical standard with a base 6½ inches in diameter. A rigid wire guard eliminates danger of contact with the heating element. Operates on either direct or alternating current of 105 to 115 volts. Price includes 8-foot cord. Height of heater, 15 inches. Shipping wt., about 5 pounds. Price

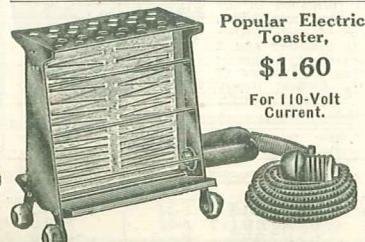


\$5.45

Popular Electric Toaster.

\$1.60

For 110-Volt Current.



Why Not Make Washday a Pleasure? See Pages 32 and 33.

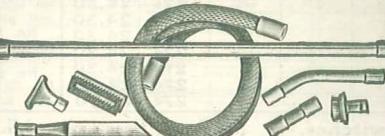
Menominee Oscillating Fan.

Poplar 8-inch four-blade oscillating fan, especially suitable for residence use. Automatically turns from side to side, throwing breeze to various parts of the room. Fan blades and guard of lacquered brass. Balance of machine black enamel finish. Efficient motor, three speeds. Can be set upright or screwed to wall, etc., like a bracket. Operates on the usual city alternating current of 105 to 115 volts. Shipping weight, about 15 pounds. Price, complete with guard and attachment plug

Electric Fan, \$4.25

Nickel plated standard, blades and brush holders. Breeze can be thrown at nearly any angle desired. Fan can be hung on wall. Costs about 1 cent to operate six hours. Operates on usual city current of 105 to 115 volts. Moving a single wire adapts fan to either direct or alternating current. 8 inches high, 7 inches wide, 4 inches deep, base 3½ inches in diameter, fan about 6 inches in diameter, 5 feet of cord and plug. Shipping weight, about 3½ pounds. Price, complete.....\$4.25

Attachments for Suction Cleaner.



Clean furniture, draperies, mattresses, cloths, woodwork, books, radiators, upholstery, corners, etc., much more thoroughly than beater, brush or dust cloth. Consist of the following parts: 7 feet 9 inches of fabric covered reinforced rubber hose; 3 feet 3 inches of nickel plated tube; nickel plated steel radiator or blower attachment; two attachments for special connections; polished attachment to receive hose; brush attachment; polished wall or upholstery tool. Fit our Energex Cleaner only. Shipping weight, about 7 pounds.

No. 57H7515 Price, complete.....\$5.75

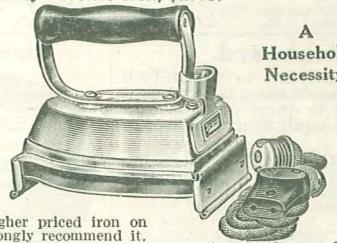
HEATING DEVICES

Immersion Heater and Sterilizer.



No. 57H5250 This Sanitary Aluminum Immersion Heater affords a quick means for heating liquids. It is easily attached to any ordinary electric light socket and quickly heats water, milk or other liquids in which it may be immersed. It is useful wherever hot water is needed. Weighs only 2 ounces. Light and handy as a teaspoon. Each one comes complete with cord, attachment plug and switch on heater. Shipping weight, 5 ounces. Price.....\$2.15

Quality Electric Iron, \$2.45.



A Household Necessity.

Works on 108-115 Volts.

No. 57H5163

This "Quality" Electric Iron is nickel plated and polished all over, and has a black finish. It is well balanced and well finished in all details. This iron will compare favorably with any higher priced iron on the market and we strongly recommend it. Complete with 6 feet of cord and attachment plug to fit any lamp socket. Weight of iron, about 6½ lbs. Shipping wt., about 10 lbs. Price, complete, including steel safety stand.....\$2.45

No. 57H5150 This dainty toaster will toast two slices of bread at the same time, and does the work quickly. It is nickel plated and polished. The perforated top can be used as a warming rack. Length, 5 inches; 6 inches high; 4 inches wide. Complete with 5 feet 6 inches of cord and plug. Shipping wt., about 3 lbs. Price

\$1.60

Westinghouse Electric Fans.

Made by the Westinghouse Co., whose name on any piece of electrical goods is in itself a guarantee of quality. High grade material. Black oxide finish. Quiet running; ideal for home or office. Can either be set upright or screwed to wall, etc., like a bracket. We list two styles, straight and oscillating. The oscillating automatically moves from side to side, throwing the breeze to various parts of the room. Both styles operate on the usual city alternating current of 105 to 115 volts.

No.	Blades	Diam. Inches	Type	Shpg. Wt.	Price
57H6222	4	8	Straight	13 lbs.	\$ 9.95
57H6227	4	10	Straight	25 lbs.	\$ 0.95
57H6228	4	10	Oscillating	25 lbs.	\$ 4.00
57H6223	4	12	Straight	34 lbs.	\$ 4.90
57H6224	4	12	Oscillating	46 lbs.	\$ 9.00
57H6225	6	12	Straight	34 lbs.	\$ 5.30
57H6226	6	12	Oscillating	46 lbs.	\$ 9.75
57H6244	4	16	Straight	40 lbs.	\$ 18.00
57H6245	4	16	Oscillating	50 lbs.	\$ 22.50
57H6246	6	16	Straight	42 lbs.	\$ 19.00
57H6247	6	16	Oscillating	52 lbs.	\$ 23.85

Electric Sewing Machine Motor.

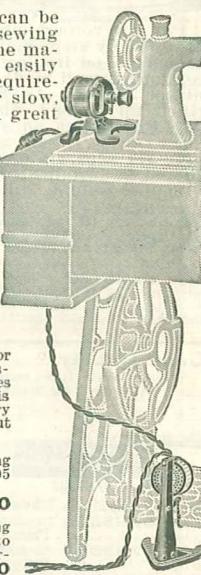
This well made motor can be quickly attached to your sewing machine without marring the machine in any way. Speed easily regulated to meet your requirements. Can be run fast or slow, as you wish. You can do a great deal more sewing without being worn out from running the machine.

The motor and controller need never be in the way, as they can be removed when the machine is not in use. Operates on city current of 105 to 115 volts, or 30 to 32-volt private lighting plant current. Uses little current. Plug can be attached to any convenient lamp socket. 9 feet 6 inches of cord furnished.

The motor is recommended for use in general household or domestic sewing. Cannot be used in homes that do not have electricity, and is not constructed to operate from dry batteries. Shipping weight, about 10 pounds.

No. 57H7550 Electric Sewing Machine Motor, complete, for 105 to 115-volt alternating current. Price.....\$8.50

No. 57H7551 Electric Sewing Machine Motor, complete for 30 to 32-volt private lighting plant current. Price.....\$8.50

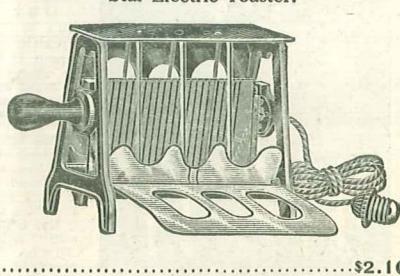


Suspended Portable Heater.

No. 57H5235 This type of heater is similar to our No. 57H5236. This heater is designed to be supported from the electrifier or lamp socket by simply screwing the plug into position. It consists of a single heat unit mounted in a reflecting bell with protecting guard, and short cord and plug. It will operate on alternating or direct current light circuits of 110 volts (the usual voltage). Shpg. wt., about 4 pounds. Price

\$3.75

Star Electric Toaster.



Use Your Electricity for More Than Light

Your electric current will do so many other things for you besides supplying light. As a source of heat for cooking, ironing and other household purposes it is cleaner, more convenient, and more efficient than coal, wood or gas.

Majestic Percolator.

No. 57H5105

Make coffee right at your table and serve it piping hot. This handsome percolator not only looks good but is good. Made of rolled copper heavily nickel plated. Capacity, 2½ pints. Height, 9½ inches. Weight, about 4½ pounds. Shipping weight, about 4½ pounds. Price..... \$6.15

fusible plug prevents any injury to the vessel, even if it should boil dry. Furnished with 6 feet of cord and plug. Operates from any electric light circuit with the usual city current of 105 to 115 volts. You will be proud to own one of these. Shipping weight, about 4½ pounds.

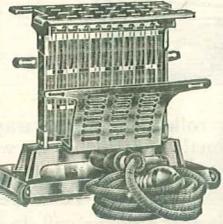
Price.....

Majestic Toaster.

No. 57H5153 Place this

dainty toaster right on your dining table and serve deliciously fresh, warm toast direct from it. It toasts evenly and quickly. Polished nickel plated steel body. Height, 6½ inches. Base, 7½ x 3½ inches. Top, 3½ x 6½ inches, makes an excellent warming rack. Heating surface, 3¾ x 4¾ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. A pretty piece of table service. Shipping weight, about 2½ pounds.

Price.....



\$3.25

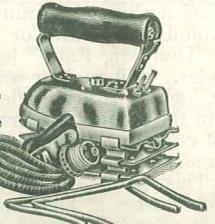
Majestic Combination Grill.

No. 57H5161 Attractive combination griddle, frying pan and broiler, all made of pressed steel, nickel plated and polished. The Majestic quality throughout. Cool ebony finish wood handles. Depth of frying pan, 1½ inches; of broiler, 2 inches; of griddle, ¾ inch. Heating surface, 7¾ x 5¾ inches. Base of black finished steel, 6½ x 10 inches. Fiber feet; 6 feet of flexible cord. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 6 pounds. Price..... \$4.50

Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 6 pounds. Price.....

Combination Iron and Stove.

No. 57H5169 A good looking, efficient iron which, when turned upside down and supported by the steel braces that come with it, forms an excellent small stove. The upper shelf of the stand has a groove in which to place a curling iron for heating. Cool ebony finish wood handle. Complete with 6 feet of cord and plug, steel braces and three-section stand. Operates from any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 9½ lbs. Price..... \$3.30



\$3.30

Majestic Heating Pad.

Beats Any Hot Water Bottle.

No. 57H5229 A soft, comfortable heating pad that stays hot as long as the current is on. Construction shows Majestic quality throughout. Special switch on cord near pad controls it to three different heats—warm, medium hot and very hot. Convenient in sickness or during cold weather. Covering is warm wool and cotton mixture. Size, 14½ x 11½ inches. A washable white linen slip comes with it and 9½ feet of flexible cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shpg. wt., about 2½ lbs. Price..... \$6.15

Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shpg. wt., about 2½ lbs. Price.....

Automatic Heating Pad.

No. 57H5228 A very high grade heating pad, soft, flexible and adjustable to almost any temperature. The controller box with its dial gives you a range of 55 degrees, from warm to very hot. Covering of warm gray wool, easily removable and washable. Size, 14x18 inches. Furnished with 10 feet of electric cord and plug for any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 3 pounds. Price..... \$7.00

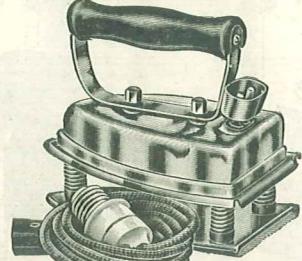


\$7.00

The Majestic Line.

As regards quality, workmanship and finish, the Majestic line of heating utensils is among the best. The manufacturer is unusually careful to produce none but high grade goods. Through our economical business methods we are able to offer this fine line at about one-fifth below the regular retail prices.

Majestic Flat Iron.



No. 57H5170 No hot stove, no changing of iron necessary with this fine electric iron. The plug at the end of 6 feet of cord attaches to any lamp socket, so you can iron in any room in the house or in the hotel when traveling. Handsomely nickel plated steel body; blue steel base which heats uniformly and retains heat well. The very careful construction insures long and satisfactory service. Cool ebony finish wood handle. Standard household weight (6 lbs.). Operates from any electric light circuit with the usual city current of 105 to 115 volts. We believe that you cannot buy a more satisfactory iron anywhere. Shpg. wt., about 7 lbs. Price..... \$3.25

Jury to the vessel even should it boil dry. Pan has detachable ebony finish wood handle about 5½ inches long. Base made of brass, nickel plated. Diameter, 8¾ inches. Ebony finish wood grips. Height, 8¾ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. A quality article through and through. Shipping weight, about 5½ pounds. Price.....



\$9.75

Majestic Coffee Urn.

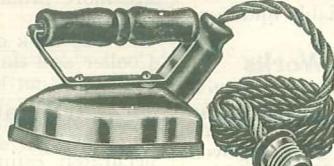
No. 57H5106 A beautifully designed and very efficient percolator. Makes your coffee right at the table and keeps it hot. Copper body, handsomely nickel plated. Cool ebony finish wood handles. Easily taken apart and cleaned. Capacity, 2½ pints. Height, 13¼ inches. A special fusible plug prevents any injury to the utensil even if it should boil dry. Furnished with 6 feet of cord and plug. Operates from any electric light circuit with the usual city current of 105 to 115 volts. A quality article through and through. Shipping weight, about 5 pounds. Price.....

Majestic Chafing Dish.

No. 57H5130 A handsome electric heated chafing dish. No troublesome flame or dirt. Food pan and cover of solid copper, nickel plated and polished. Capacity, about 3 pints. A special fusible plug prevents injury to the vessel even should it boil dry. Pan has detachable ebony finish wood handle about 5½ inches long. Base made of brass, nickel plated. Diameter, 8¾ inches. Ebony finish wood grips. Height, 8¾ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. A quality utensil. Shipping weight, about 5½ pounds. Price.....

\$9.00

For Daughter and Mother.



No. 57H5164 A practical little iron though it weighs only 1 pound. Little girls enjoy helping mother with it. Their mothers, too, find it excellent for pressing silks, neckwear and other small and dainty things. For travelers it is especially convenient. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Consumes only about one-eighth as much current as a 6-lb. iron. Shpg. wt., about 1¾ lbs. Price..... 95c

No. 57H5165 Liquid Warmer.

No. 57H5191 Liquid inside may be heated warm or hot as wished. Heats baby's milk just right. Current automatically turns off when desired temperature is reached. Full directions, 6 feet of cord and plug to attach to any lamp socket. Polished nickel plated. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Price does not include bottle. A wide mouth bottle fits it best, but any kind can be used with success. Shipping wt., about 4¾ lbs. Price..... \$3.25

No. 57H5192 Combined Egg Cooker and Liquid Warmer. Composed of one heater and attachments for egg cooking and liquid warming. Temperature and time controllable as with the above. Shipping weight, \$3.75 about 5 lbs. Price, without bottle.....

Majestic Liquid Heater.

No. 57H5249 Quickly heats a full amount of water, milk or other liquid. Quicker, yet more economical than a stove. Fine for the sick room, the nursery, traveling, quick shaving. Made of copper, nickel plated, with nickel plated steel rack. Majestic quality. Length, 6¾ inches. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 1 pound. Price..... \$3.25

Majestic Electric Radiator.

No. 57H5237 Fine for that cold bathroom, bedroom, small office, etc. Very attractive with its bright copper lining, polished nickel plated steel ends and black finish top and back. Quality there in every part. Body of sheet steel, 12 inches high exclusive of ebony finish wood handle. Size, 10¾ inches wide, 5 inches deep. Furnished with 6 feet of flexible cord. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 7 pounds. Price.....

\$5.30



A Good Iron.

No. 57H5166 A 6-pound iron that saves many steps. Stays hot as long as current is on. Steel base, finished base; other metal parts polished nickel plated. Cool wood handle. Furnished with 6 feet of cord and plug which attaches to any lamp socket. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 9½ pounds. Price.....

\$2.60

Electric Egg Cooker.

No. 57H5190 Cooks one to four eggs, soft, medium or hard as wished, without the tough outer lining common to boiled eggs. Automatically turns off current when through. Full directions with it. Attractively nickel plated. Furnished with 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Shipping weight, about 3½ pounds. Price.....

\$3.25



Curling Iron.

Electric heated. Stays hot as long as current is on. No flame, no soot. Very well made and very attractive. Metal parts of copper and brass, nicely nickel plated. Mahogany finish handle. Length, 12 inches. Stand included, also 6 feet of cord and plug. Operates on any electric light circuit with the usual city current of 105 to 115 volts. Aluminum comb comes extra. This slips over the iron. With the current on and the comb thus heated, it will help dry the hair after washing.

No. 57H5252 Curling Iron without comb. Shipping weight, about 1¾ pounds. Price.....

\$3.25

No. 57H5253 Curling Iron with comb. Shipping weight, about 1¾ pounds. Price.....

\$3.60

"MAGIC" Electric Fireless Cookers

Hot Meals Without a Hot Kitchen

TIME SAVED

EFFORT SAVED

SAFE



No. 57H5260

Cooking by Electricity

Until recently cooking by electricity has been out of reach as far as the majority of the people were concerned. This was due to several causes, namely: The enormous cost of operating electric cooking stoves or ranges, due to the large amount of current consumed, the cost for current and the fire hazard and short life attached to the device. The first cost of the stove was in most cases out of reach of the average household, which feature alone kept many from having electric cooking in the home.

The advantages of electric cooking could be clearly seen, and after years of experimenting and testing the Electric Fireless Cooker is offered to you as a safe, economical, reliable and convenient electric cooking device.

How Our Electric Fireless Cooker Works

This cooker is built on the principle of the old time Dutch ovens, which were built of brick or stone, out in the open; the oven was fired until it attained a high temperature. The fire was then withdrawn, the food to be prepared was placed in the oven and the door sealed up tightly. The oven maintained the cooking heat for hours, and the food was slowly and thoroughly baked or roasted. The natural flavors were retained together with all the food value.

Our Electric Cooker is the 20th century application of this principle to the extent that most of the cooking is done after the current is turned off. The food is placed in the cooker, the current turned on. When steam issues from the vent valve the current should be turned off; the cooking will continue from the heat stored up in the heating unit and cooker.

The Advantages of Our Electric Cooker

The installation of the Electric Cooker in the home transforms the kitchen from a hot crowded room, requiring lots of tiresome routine work, to a cool, cheerful place. The cooker adds leisure hours to the housewife's day. No more bending or stooping to look into hot gas or coal stove ovens. When the baking is done

the cooker is easily rolled out of the way. On account of its size it is desirable for small apartments as well as large kitchens. To operate, simply turn the switch—no matches, no smoke, no odor.

What It Does

Our Electric Fireless Cooker will do all the work of the regular fireless cooker, which requires the heating of food and heat retainers before the food is placed in the cooker, and the Electric has none of these disadvantages.

Food cooked in the Electric Cooker has a minimum amount of shrinkage as against 10 to 20 per cent over open fire, the flavors are more pronounced and the food tastes better and is better in many ways.

The cook or housewife simply places the food in the Electric Cooker and turns on the current; the cooker does the rest. The food does not have to be cooked first nor any stoves heated.

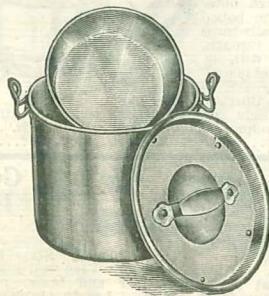
What It Costs to Cook Electrically

The cost for current for operating electric devices cannot be accurately estimated, as there are many variables which prevent any intelligent definite statement being given. The cost of current is based on a price for each kilowatt hour. This price varies in different localities. The policy of the central station also is a factor. Some companies have a sliding discount scale which sets the price according to the number of watts or kilowatts consumed; other companies have a "Domestic Rate," lower than the lighting rate, governed by the meter. Still another way of furnishing this current is on a "Flat Rate," which is a specified amount to be paid every month, regardless of the amount of current used.

The amount of current consumed may be regulated to a great extent by the operator; the current should always be turned off at the proper time. This point is covered in the Book of Recipes furnished with each cooker. The current consumption is very low—for instance, it takes a 5-pound roast about three hours to cook in any stove, but forty-five minutes current in the cooker gives

(Continued on page 13.)

Special Cooker Utensils

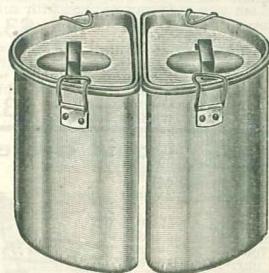


Double Boilers.

Double Boilers. For cooking cereals, etc. Seamless aluminum, in two sizes. Shipping weight, about 5 pounds.

No. 57H5135 Four-quart size. Inner vessel capacity, 2 quarts. Price, each.....\$1.80

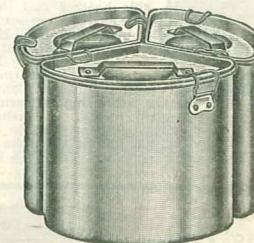
No. 57H5137 Eight-quart size. Inner vessel capacity, 3 quarts. Shipping weight, 6 lbs. Price, each...\$2.70



Double Nesting Utensils.

No. 57H5139 Double Nesting Utensils. Made of seamless aluminum. Enables the operator to cook two different kinds of food at one time. Capacity, 3 quarts each. Shipping weight, about 5 pounds.

Price.....\$3.00

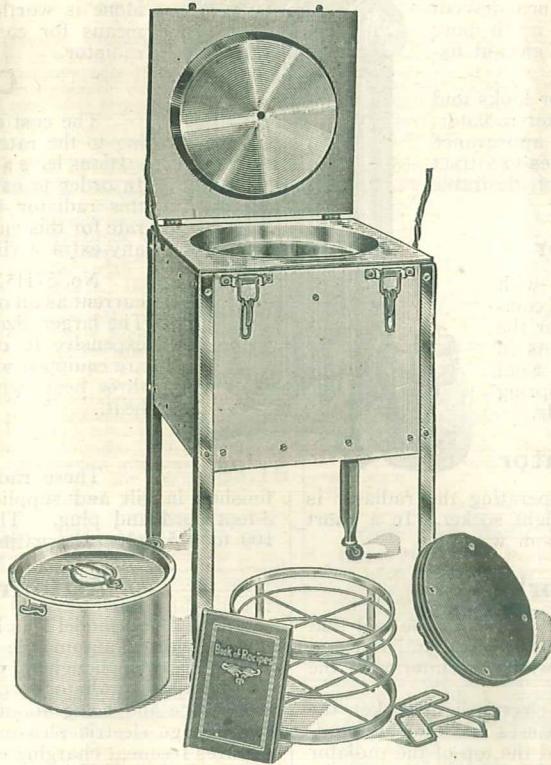


Triple Nesting Utensils.

No. 57H5141 Triple Nesting Utensils. By the use of the triple utensil set three different foods can be cooked at one time, thus affording a great saving in fuel. Capacity, 2 quarts each. Shipping weight, about 7 pounds.

Price.....\$3.35

"MAGIC" Electric Fireless Cookers



(Continued from page 12.)

all the heat needed to finish cooking. The current should be turned off at the end of the forty-five minutes, as it is being wasted. At the rate of 10 cents per kilowatt, forty-five minutes shows a cost of 4½ cents, or about 1½ cents per hour for the whole cooking operation. This cost is so low that it is a great saving over a coal or gas range.

Construction of Our Electric Fireless Cooker

Heating Unit—The heating unit is the heart of the Cooker and has therefore received a great deal of attention. It is wound for 600 watts at 110 volts, and is installed directly in the cooking compartments, where the valuable heat has little chance to escape. We can furnish this unit for 220 volts on special order.

Insulation—Next in importance is the insulation. Mineral wool and Kieselguhr combined are used, which makes a very high grade heat retainer.

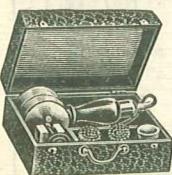
Casing—The casing on the Cabinet type cooker is made of heavy sheet steel, finished in gray. The varnish is water and steam resisting and will stand rough usage. The casing on the Junior size is made of heavy sheet iron finished in aluminum. Both types are equipped with the patent vent valve and aluminum cooking compartment.

Fireproof—These Cookers have been indorsed by the Chicago Underwriters' Laboratories after a thorough and exhaustive series of tests. Every detail of safety has been carried out to the farthest point, with the result that the cooker can be used safely under all conditions.

Big Values in Vibrators—Don't Overlook Them

No. 57H6307 This new type vibrator works on an entirely new principle. Instead of being operated by a motor, this vibrator is operated by magnetism. The magnet and shaft are placed inside the round nickel plated frame in the same way the motor is placed in the ordinary machine. When attached to an alternating current circuit of 110 to 115 volts the shaft carrying the applicator will vibrate back and forth in a straight line. This vibrator comes in a leatherette box 9 inches long, 6 inches wide and 3¾ inches deep, with fasteners, handle and set of applicators. This machine is highly recommended to those desiring a good vibrator at a moderate price. Before purchasing any vibrator you should consult your family doctor, to make sure you are purchasing the one best suited to your needs. Shipping weight, about 4 pounds.

Price.....\$8.00



Equipment

With each cooker is included necessary utensils: A seamless aluminum vessel, baking racks, discs and tongs, as shown in the illustration.

The Junior 8-Quart Size

No. 57H5260 This model was brought out to meet the demand for an inexpensive and efficient cooker of this kind. This model is the same as the Cabinet Model, with the exception of the case, which is made of heavy sheet iron finished in aluminum. The results obtained are exactly the same as with the Cabinet Model. Furnished complete with adjustable rack, on which ordinary utensils can be used, 8-quart utensil of seamless aluminum, baking disc, iron grate, lifting handles and instruction book. The Recipe Book is also included. Shipping weight, about 40 pounds.

Price.....\$13.00

Cabinet Electric Fireless Cooker

This model has the same capacity as the Junior, the only difference being in the style of mounting. This model is mounted, as shown, in a gray finished case of sheet iron, on four steel legs equipped with casters to facilitate moving. Shipping weight, about 100 pounds.

No. 57H5263 Cabinet Electric Fireless Cooker, 8-quart size. Price, complete.....\$21.00

No. 57H5266 Same as No. 57H5263, 12-quart size. Shipping weight, about 100 pounds. Price, each.....\$26.00

No. 57H6309 This vibrator is larger than No. 57H6307 and operates on the same principle. A new and useful improvement has been added which enables the operator to use either the side motion vibration or, by placing the applicator shaft through a hole in the side of the frame, the applicator will vibrate to and from the frame, which gives a pounding effect when applied. This machine is well made and finished. Furnished complete with set of applicators. Packed in leatherette box 10½ inches long, 7 inches wide, 4½ inches deep. Shipping weight, about 6 pounds.

Price.....\$10.75



Improved Type Electric Radiator

This new improved type electric radiator is a distinct departure from the reflector and incandescent lamp type of radiators. This new type is much more efficient and economical, besides being an elegant fixture in any home.

The Improved Type Electric Radiator looks and works very much like the familiar hot water radiator. There is nothing odd or objectionable in appearance about this radiator. It has no freakish lines to attract attention, but is a businesslike item of desirable appearance.

Uses of the Radiator

The entire house may be equipped with these radiators if desired, but their most common use is as an auxiliary heating unit for the bathroom, bedroom, porch or other rooms in which there is desired more heat than the usual heating system affords. Convenient in the Spring and Fall when regular heat is not available.

How to Connect the Radiator

The only connection necessary for operating the radiator is simply attaching the plug to an electric light socket. In a short time the radiator becomes hot and the room warm.

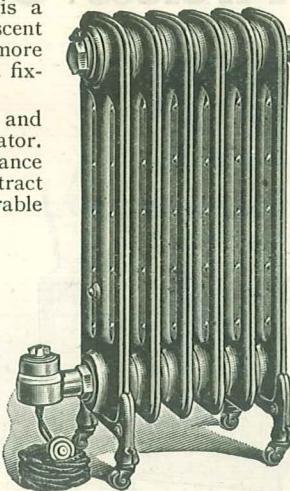
How They Work

The essential feature of their construction lies in the fact that the heating element is placed in the hollow base of the radiator and is immersed in a non-oxidizing fluid with which the interior of the radiator is almost filled.

When the radiator is connected to an electric light socket, the heating element gets very hot. This heat passes into the surrounding fluid, which, as it gets hot, rises toward the top of the radiator and thus a circulation is maintained and the fluid in the radiator constantly circulates up from the heating element and then down on the side of the radiator section, back to the element, then up again, etc. This is practically a duplicate of the operation of the familiar hot water system for heating dwellings. The heat is conveyed to the radiator surface by means of the fluid in the radiator and passed off into the room from the outside surface of the radiator.

Safe and Convenient

As the heating element is entirely enclosed in this radiator, the fire hazard is removed. The radiator may be moved around from



room to room on the casters provided. This feature alone is worth careful consideration, as it provides a means for easily cleaning under and behind the radiator.

Cost of Operation

The cost of operating the radiator varies according to the rate for current for heating. Most central stations have a special rate for current used for heating. In order to estimate the cost of operating any size of this radiator find out from your central station the rate for this current and also if your house will require any extra wiring in order to use the radiator.

No. 57H5241 Radiator consumes about as much current as an ordinary 6-pound electric iron, 500 watts. The larger sizes use a little more current, but are not expensive to operate. The two large size radiators are equipped with three changes of heat by means of a three heat switch which gives low, medium and high heat.

Construction

These radiators are made of pressed metal, finished in gilt and supplied with swivel roller bearing casters, 8-foot cord and plug. They are made to operate on circuits of 100 to 115 volts, alternating or direct current.

Automobile Radiator

This small model was brought out to meet the demand for an efficient electric automobile heater. Electric pleasure cars are cold in Winter, even though they are entirely closed.

This little radiator is placed on the floor of the car, requiring little space and using about 5 per cent of the current discharge of the average electric pleasure car battery. As the electric vehicle requires frequent charging of its batteries, this additional load adds only a small amount to the cost of operating. The radiator is made up of two sections, complete with cord and plug. Please state model and make of car, when ordering.

No.	Nominal Rating (in Watts)	Size in Square Feet of Radiation Surface	No. of Sections	Length Over All, Inches	Width Inches	Height and Columns	No. of Heat Changes Provided	Approximate Shipping Weight, Pounds	Price
*57H5240 1/3	330	3.0	2	6	7 3/8	15" - 2	1	25	\$15.00
57H5241	500	8.8	4	8	7 3/8	23" - 2	1	50	19.95
57H5242	750	15	6	12	7 3/8	26" - 2	3	65	27.50
57H5243 1/3	1000	20	8	16	7 3/8	26" - 2	3	75	32.00

*80 volts, for automobile only.

Improved Electric Water Heater



The Improved Electric Water Heater works on the same principle as the Improved Electric Radiators. In dwellings in which the standard 30-gallon hot water tank is used, you can apply an Improved Heater by inserting it in the boiler through the standard opening in the top. The element is then connected to the electric circuit and you may have plenty of hot water at any time, on a few minutes' notice.

The Improved Electric Water Heater appears like a long rod, reaching almost to the bottom of the tank. In it is contained the heating element and the same insulating non-oxidizing fluid as is used in the Improved Electric Radiator. The surface of this rod, which is about 1 1/4 inches in diameter, becomes very hot, and when it is immersed in the water of the tank raises that water to the heat required of hot water for household purposes.

As with other heating devices, central stations in most communities make a special rate on this heater. It is frequently possible for the householder to enjoy a flat rate of so much a month for all the hot water he needs.

This is far more convenient than the use of coal or gas, requires little attention, is cleaner and has nothing to get out of order.

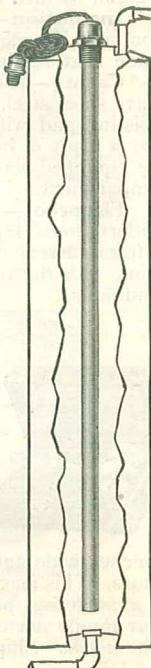
With current at 4 cents per kilowatt hour, 30 gallons of water could be raised from the temperature of the room to about 150 degrees Fahrenheit at a cost of 22 cents. The notable point in favor of this heater is that it need be used only when hot water is wanted.

An insulating cover for a standard 30-gallon tank is furnished with each heater. This heater comes in two sizes, as follows. Shipping weight, about 20 pounds.

Operates on 110 to 115-volt direct or alternating current.

No. 57H5247 Improved Electric Water Heater, 500 watts. Price.....\$14.95

No. 57H5248 Improved Electric Water Heater, 750 watts. Price.....17.50



Modern Electrical Appliances

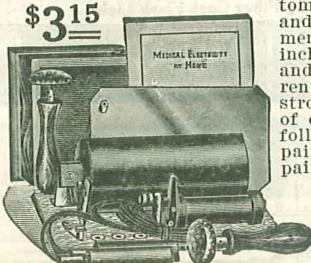
For Professional and Home Use.

Medical Batteries, Vibrators and Violet Ray Outfits are in extensive use for the relief of certain diseases and disorders. Their advocates are enthusiastic over the possibilities for relief resulting from the proper use of these machines.

We advise consultation with a physician before placing an order, so that the purchaser may be sure to order the particular machine best suited to the purpose for which it is to be used. We guarantee these appliances to be high grade in every respect.

Single Cell Medical Battery.

No. 57H6300 Polished oak case, $8\frac{1}{16} \times 5\frac{1}{4} \times 4\frac{1}{8}$ in., opening top and bottom. Lower compartment for dry cell and battery mechanism, upper compartment for accessories. Faradic coil, 1 inch in diameter with locking device and spring vibrator. Intensity of current regulated, from very mild to very strong, by withdrawing shield from core of coil. Metal parts nickel plated. The following accessories are included: One pair conducting cords with tips, one pair insulating wooden handles, one pair nickel plated metal handles, one pair sponge electrodes, one nickel plated foot plate. Shipping weight, 8 pounds. Price, complete with accessories and one dry cell, ready for use.... **\$3.15**



For extra batteries see Nos. 57H6085 and 57H6092, page 18.

Our Popular Priced Home Vibrator.

No. 57H6311 Packed in a satin lined imitation leather case; motor mounted in cast aluminum frame, polished. The motor speed can be controlled by turning thumbscrews; all internal parts of hardened steel. Furnished with five applicators; one metal disc, one soft sponge, one rubber cup, one metal ball, one scalp disc. Operates on 100 to 120-volt current. Especially recommended for home use. This vibrator will be found the ideal size for use in the home. Because of this feature as well as its simplicity of operation, it will prove an extremely satisfactory low priced appliance.

Price, complete..... **\$9.50**
No. 57H6322 Lovolt Vibrator. Same as No. 57H6311 but constructed to operate on 32-volt private lighting plant current. **\$9.50**

Price.....

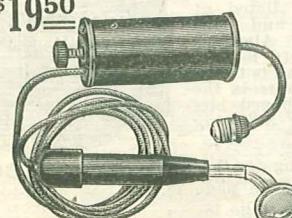
Type A Vibrator for 104 to 115-Volt Current.

No. 57H6312 Packed in a satin lined imitation leather covered carrying case, and includes a long double conductor cord with plug for attaching to any electric light socket. The outfit consists of the vibrator and six different applicators; one hard rubber disc; one soft sponge rubber disc; one rubber cup; one hard ball; one small scalp applicator and one large scalp applicator. The vibrator is made with a very quiet running and powerful motor, finished in polished aluminum, being very strong and durable. Shipping weight, about 5 lbs.

Price, complete, in imitation leather covered case, with electric conductor cord and six applicators..... **\$12.95**
Unless otherwise specified we will send this vibrator with motor suited for currents of from 104 to 115 volts.

No. 1 High Frequency Violet Ray Set.
No. 57H6318 Simply apply the machine to any electric light socket of 104 to 110-volt direct or 60-cycle alternating current. It gives the well known high frequency Violet Ray treatment without pain or shock; strength of current may be regulated by turning the generator knob. Outfit consists of one hard rubber generator complete with a durable cord, large hard rubber handle for holding the electrode, and one surface electrode. Complete with instructions. Shipping weight, about 4 pounds.

Price, complete **\$19.50**



No. 57H6316 Packed in imitation leather case. Made of aluminum, black enameled, nickel plated trimmings. Hot and cold air may be obtained by turning switch without stopping motor; gives delightful breeze, operates on 100 to 120-volt current. Shipping weight, about 5½ pounds.

Price, complete.....

\$11.00

Electric Hair Dryer.



\$11.00

No. 2 High Frequency Violet Ray Set.

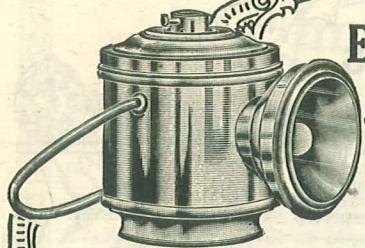
No. 57H6320 This set operates the same as our No. 1 Violet Ray Set, but is more complete. The generator is encased in a quarter sawed oak case with lamp and regulator knob mounted on the top. Furnished with cord and plug connections, hard rubber handle, electrode and instructions. The cost of operating the Violet Ray Generator is very small, as the current taken into the machine is transformed into a high frequency current of very bright violet rays. The surface electrode furnished is used for treating the face and entire surface of the body. Shipping weight, about 6½ pounds.

Price, complete.... **\$28.50**



\$28.50

Electric EVEREADY Flash Lights



You will find many uses for a flash light. They have all the usefulness of the ordinary candle or lantern, with extra advantages all their own. Clean, convenient,

Tungsten

Search Lantern.

No. 57H6675

Ideal for watch-

men, yacht, motor

boat and general

household uses.

Strong, nickel plat-

ed all over, 5 inches

high. Candle power magnified by the 3-inch lens. Large ball,

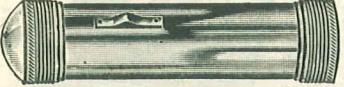
convenient to carry on the arm. Shipping weight, 4 pounds.

Price, complete with 5-cell Tungsten battery.....\$4.40

For extra batteries see No. 57H6710 on page 18. For extra

lamps see No. 57H6916 on page 18.

Eveready Non-Short Circuit Nickel Plated Flash Light.



Made with strong brass case, specially nickel plated and polished. Adapted for use around motor cars, motor boats and shops where the hands of the user are likely to be oily or wet. Insulated so that there is no possibility of short circuiting by contact with metal objects. An ideal light to carry in the tool box. Three sizes. Shipping weights, 14 ounces, 1½ pounds and 1¾ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6658	1½	5½	2-cell	\$0.96	57H6791	57H6906
57H6660	1½	6¾	2-cell	1.18	57H6790	57H6907
57H6662	1½	9	3-cell	1.38	57H6705	57H6905

Eveready Large Lens Nickel Plated Flash Lights.



Same as above, but larger reflector and lens, 2½ inches in diameter, magnifies the candle power and spreads the light. Two sizes. Shipping weights, 2 pounds and 2¼ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6664	1½	6¾	2-cell	\$1.58	57H6790	57H6907
57H6668	1½	9	3-cell	1.87	57H6705	57H6905

Eveready Extra Large Lens Nickel Plated Flash Light.



Same as those listed above, but with extra large reflector and lens, measuring 3 in. in diameter. A fine flash light that will appeal to those who want a large lens light. Two sizes. Shipping weights, 1½ pounds and 2½ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6654	1½	6¾	2-cell	\$2.25	57H6790	57H6907
57H6655	1½	9	3-cell	2.65	57H6705	57H6905

Eveready Flash Light Candle.

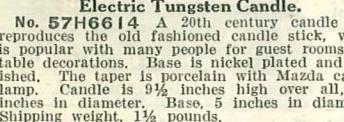


No. 57H6612 This dainty candle is a desirable addition to any dresser. Very attractive and useful too, making a very desirable gift. Switch in the stem near the base gives control of the light at any time. Highly polished, nickel plated, 1½ inches in diameter, 5½ inches high; base, 4 inches in diameter. Double cell battery. Shipping weight, about 1½ pounds.

Price, with Tungsten battery.....\$1.10

For extra batteries see No. 57H6791 on page 18. For extra lamps see No. 57H6903 on page 18.

Electric Tungsten Candle.



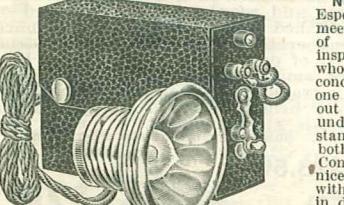
No. 57H6614 A 20th century candle that reproduces the old fashioned candle stick, which is popular with many people for guest rooms and table decorations. Base is nickel plated and polished. The taper is porcelain with Mazda candle lamp. Candle is 9½ inches high over all, 1½ inches in diameter. Base, 5 inches in diameter. Shipping weight, 1½ pounds.

Price, complete with 3-cell battery.....\$2.80

For extra batteries see No. 57H6753 on page 18.

For extra lamps see No. 57H6917 on page 18.

Tungsten Cap Lights.



No. 57H6606

Especially adapted to meet the requirements of hunters, miners, inspectors and all who need a strong, concentrated light, one that will not blow out or cause a fire under any circumstances and permits both hands to be free. Consists of a reflector, nicely nickel plated, with lens 2½ inches in diameter. Can be attached to the hat, coat, or elsewhere, by means of the attachment pins. Has 5 feet of flexible connecting cord and a battery box which holds the five-cell battery, operated by the switch. Shipping weight, about 4 pounds.

Price, complete with five-cell Tungsten battery.....\$4.40

For extra batteries see No. 57H6731 on page 18.

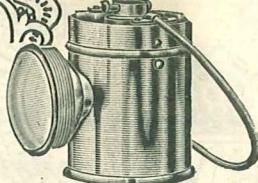
For extra lamps see No. 57H6916 on page 18.

No. 57H6607 Same as No. 57H6606, but equipped with a three-cell battery. Shipping weight, about 2½ pounds.

Price, complete.....\$4.00

For extra batteries see No. 57H6735 on page 18.

For extra lamps see No. 57H6909 on page 18.

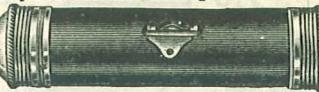


Handy Electric Lantern.

No. 57H6676 Convenient anywhere a lantern is needed. Safe around gasoline and explosives of all kinds. Every housewife will appreciate one of these lanterns. Nicely nickel plated and polished all over, 4½ inches high, large lens 2½ inches in diameter. Ball is about 5½ inches across. Shipping weight, 2½ pounds.

Price, complete with three-cell Tungsten battery.....\$2.80
For extra batteries see No. 57H6775 on page 18. For extra lamps see No. 57H6909 on page 18.

Eveready Fiber Case Flash Lights.



Vulcanized fiber case, with nickel plated trimmings. Very popular style. Three sizes. Shipping weights, 14 ounces, 1½ pounds and 1¾ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6640	1½	5½	2-cell	\$0.77	57H6791	57H6906
57H6643	1½	6¾	2-cell	1.95	57H6790	57H6907
57H6646	1½	9	3-cell	1.10	57H6705	57H6905

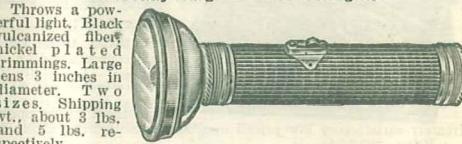
Eveready Large Lens Fiber Case Flash Light.



Same as above, but larger reflector and lens, 2½ inches in diameter, increases the candle power and spreads the light. Two sizes. Shipping weights, 19 ounces and 1¾ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6650	1½	6¾	2-cell	\$1.15	57H6790	57H6907
57H6653	1½	9	3-cell	1.30	57H6705	57H6905

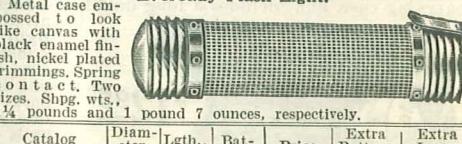
Eveready Large Lens Searchlight.



Same as above, but larger reflector and lens, 2½ inches in diameter, increases the candle power and spreads the light. Two sizes. Shipping weights, 19 ounces and 1¾ pounds, respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6655	1½	8½	3-cell	\$2.39	57H6705	57H6905
57H6657	1½	13	5-cell	3.40	57H6715	57H6916

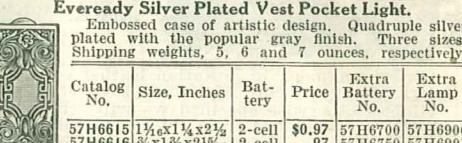
Eveready Flash Light.



Throws a powerful light. Black vulcanized fiber, nickel plated trimmings. Large lens 3 inches in diameter. Two sizes. Shipping weight, about 3 lbs. and 5 lbs. respectively.

Catalog No.	Diameter, Inches	Lgth., Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6634	1½	6¾	2-cell	63¢	57H6790	57H6907
57H6635	1½	8¾	3-cell	75¢	57H6705	57H6905

Eveready Silver Plated Vest Pocket Light.



Embossed case of artistic design. Quadruple silver plated with the popular gray finish. Three sizes. Shipping weights, 5, 6 and 7 ounces, respectively.

Catalog No.	Size, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6615	1½ x 1½ x 2½	2-cell	\$0.97	57H6700	57H6900
57H6616	¾ x 1½ x 2½	2-cell	.97	57H6750	57H6901
57H6617	¾ x 2 x 2½	3-cell	1.15	57H6751	57H6902

Eveready Vest Pocket Light.



Highly polished nickel plated case with hinged bottom. Three sizes. Shipping weights, 5, 6 and 7 ounces, respectively.

Catalog No.	Size, Inches	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6601	¾ x 1½ x 2½	2-cell	59¢	57H6700	57H6900
57H6602	¾ x 1½ x 2½	2-cell	59¢	57H6750	57H6901
57H6603	¾ x 2 x 3	3-cell	79¢	57H6751	57H6902

Coat Lapel Light.



No. 57H6608 Similar to the cap light listed at left, but smaller and does not have a lens. About 3 feet of flexible cord is furnished which connects to the battery, and a switch on the light controls the current. Battery enclosed in a cardboard box of convenient size to carry in pocket. Shipping weight, about 1 pound.

Price, complete with three-cell Tungsten battery.....\$1.60					
For extra batteries see No. 57H6752 on page 18.					
For extra lamps see No. 57H6909 on page 18.					



Electric

Miners' Type SHURLITE Flash Light.

Non-short circuit black fiber case with nickel plated trimmings. Large reflector and good lens, measuring $2\frac{1}{2}$ inches in diameter. Gives excellent light and spreads it over a large area. Two sizes. Shipping weights, 1 pound 9 ounces and $1\frac{1}{2}$ pounds, respectively.

Catalog No.	Diam., In.	Lgth., In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6568	1 $\frac{1}{2}$	6 $\frac{1}{2}$	2-cell	\$0.95	57H6890	57H6907
57H6570	1 $\frac{1}{2}$	9	3-cell	1.10	57H6890	57H6905

Fiber Case SHURLITE Flash Light.



Non-short circuit black fiber case with nickel plated trimmings. Pop-

ular style. Three sizes. Shipping weights, 1 pound, 1 pound 5 ounces and $1\frac{1}{2}$ pounds, respectively.

Catalog No.	Diam., In.	Lgth., In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6560	1 $\frac{1}{2}$	5 $\frac{1}{4}$	2-cell	60c	57H6891	57H6906
57H6562	1 $\frac{1}{2}$	6 $\frac{1}{4}$	2-cell	75c	57H6890	57H6907
57H6564	1 $\frac{1}{2}$	9	3-cell	90c	57H6890	57H6905

High Grade Electric Lanterns, Vehicle Lights, Flash Lights, Attachments and Clocks

Electric Vehicle Light.



No. 57H6699 Vehicle Light. Complete, without batteries. Shipping wt., 5 pounds. Price.....\$1.30
No. 57H6678 Vehicle Light. Complete, with two Stand-by dry batteries. Ship. wt., 9 lbs. Price.....\$1.80
For extra batteries see No. 57H6092, on page 18.
For extra lamps see No. 57H6915, on page 18.

The "Spot Light."



This standard cell flash light is made with a reflector by means of which it throws a narrow, brilliant shaft of light to a great distance. Black japanned metal case with handle and ball. Diameter of case, $2\frac{1}{2}$ inches. Height over all, 8 inches. Diameter of lens, $2\frac{1}{2}$ inches. Shipping weight, 3 pounds.

No. 57H6688 Price, without battery.....65c
No. 57H6689 The "Spot Light," complete, with battery. Shipping wt., 5 pounds. Price.....90c

For extra batteries see No. 57H6092 on page 18.
For extra lamps see No. 57H6910 on page 18.

Revolver Flash Light Attachment.



No. 57H6595 Quickly attached to revolver. Slight pressure to lever makes the light, revolver, light and gun in one hand. You can shoot straighter at night than in the daytime. Just pull the trigger when the light spots your object. Good device for watchmen and officers of the law.

Price, complete with battery.....\$1.50
Shipping weight, about $1\frac{1}{4}$ pounds. Extra batteries and lamps Nos. 57H6706 and 57H6900 on page 18. Gun not included.



Gun attachment for Tubular and Pen Light. Operates same as No. 57H6595. Nicely nickel plated. Shipping wt., $1\frac{1}{4}$ pounds.

No. 57H6596 Attachment for Flash Light No. 57H6640. Price, each.....\$1.00
No. 57H6597 Attachment for holding Pen Light No. 57H6682. Price, each.....\$1.00

Flash light not included.

SHURLITE

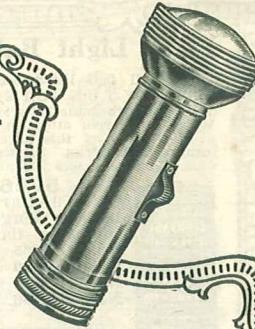
Flash Lights

Large Lens SHURLITE

Flash Light.

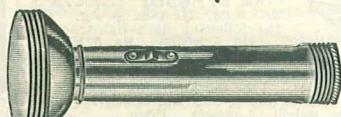
Miners' Type Nickel Plated Tubular Light.

Same as No. 57H6578 below, but made with extra large reflector and lens measuring $2\frac{1}{2}$ inches in diameter, which spreads the light over a greater area. Two sizes. Shipping weights, 2 pounds and $2\frac{1}{2}$ pounds, respectively.



Our own brand of high grade tubular flash lights. Non-short circuiting fiber and nickel plated cases. High grade material and workmanship throughout. Satisfaction guaranteed. Besides these we also carry a line of GENUINE EVEREADY FLASH LIGHTS, shown on the opposite page—a widely advertised line.

Extra Large Lens SHURLITE Flash Light.



No. 57H6590 This large flash light is a powerful light. Nickel plated and polished case, with lens measuring 3 inches in diameter. Case, $1\frac{1}{2}$ inches in diameter by $9\frac{1}{2}$ inches over all. Triple cell battery. Shipping weight, about 3 pounds.

No. 57H6592 Same as above, but made with non-short circuiting black fiber case and nickel plated trimmings.

Price, complete with Shurlite battery.....\$1.95
For extra batteries and lamps see Nos. 57H6805 and 57H6905, on page 18.

Catalog No.	Diam., In.	Lgth., In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6586	1 $\frac{1}{2}$	6 $\frac{1}{2}$	2-cell	\$1.30	57H6891	57H6907
57H6588	1 $\frac{1}{2}$	9	3-cell	1.55	57H6890	57H6905

Nickel Plated SHURLITE Flash Light.

Non-Short Circuit Tubular Light, made with brass case, nickel plated and polished.

A very handsome flash light, much used around motor cars, motor boats and shops where the hands of the user are likely to be oily or wet. Three sizes. Shipping weights, 14 ounces, $1\frac{1}{2}$ pounds and $1\frac{1}{4}$ pounds, respectively.

Catalog No.	Diam., In.	Lgth., In.	Battery	Price	Extra Battery No.	Extra Lamp No.
57H6576	1 $\frac{1}{2}$	5 $\frac{1}{2}$	2-cell	\$0.75	57H6891	57H6906
57H6578	1 $\frac{1}{2}$	6 $\frac{1}{4}$	2-cell	.90	57H6890	57H6907
57H6580	1 $\frac{1}{2}$	9	3-cell	1.05	57H6891	57H6905

Standard Hand Lantern.

No. 57H6696

Carefully constructed to give satisfactory service. An extra insurance against fire in your barn and outbuildings. No smoke, no dirt, no wicks to trim. Switch lever conveniently located turns light on or off. Battery easily replaced. Height, $9\frac{1}{2}$ inches; diameter of base, 5 inches. Shipping weight, 5 lbs.

Price, complete with triple cell tungsten battery.....\$1.98

For extra batteries see No. 57H6734, on page 18.

For extra lamps see No. 57H6909, on page 18.



No. 57H6693 Popular Double Cell Lantern, complete, without batteries. Shipping weight, $2\frac{1}{2}$ pounds.

Price.....\$1.22
No. 57H6694 Popular Double Cell Lantern, complete with two dry cells. Shipping weight, 7 pounds.

Price.....\$1.72
For extra batteries see No. 57H6092, on page 18.
For extra lamps see No. 57H6915, on page 18.

No. 57H6698 Black Enamelled Attachment to use with Lantern No. 57H6693 for testing eggs. A very convenient device. We have sold hundreds. Two eggs may be tested at one time. Shipping weight, about 8 ounces. Price.....10c

Made of steel formed to give great strength. Has both bail and grip handles. Latter fold flush with body in back. Heavy lens gives bulbseye effect. Reflector is silver plated and polished. Switch located conveniently in back. Black enameled finish with nickel plated trimmings. $7\frac{1}{2}$ inches high, $5\frac{1}{2}$ inches wide and 4 inches thick. Requires two standard $2\frac{1}{2}\times 6$ -inch dry cells. We list below an attachment to this lantern for testing eggs.

No. 57H6693 Popular Double Cell Lantern, complete, without batteries. Shipping weight, $2\frac{1}{2}$ pounds.

Price.....\$1.22
No. 57H6694 Popular Double Cell Lantern, complete with two dry cells. Shipping weight, 7 pounds.

Price.....\$1.72
For extra batteries see No. 57H6092, on page 18.
For extra lamps see No. 57H6911, on page 18.

No. 57H6667 Price, complete with double cell Shurlite battery.....70c
No. 57H6642 Straight tubular shown below. Shipping weight, about 1 pound.

Price, complete with Shurlite battery.....47c

For extra batteries and lamps see Nos. 57H6890 and 57H6907 on page 18.

Black enameled metal case, non-short circuit flash light, nickel plated trimmings. Well made and gives good light. Diameter, $1\frac{1}{2}$ inches; length over all, 6 inches. Large lens measures 2 inches in diameter. Shipping weight, about $1\frac{1}{2}$ pounds.

No. 57H6667 Price, complete with double cell Shurlite battery.....70c

No. 57H6642 Straight tubular shown below. Shipping weight, about 1 pound.

Price, complete with Shurlite battery.....47c

For extra batteries and lamps see Nos. 57H6890 and 57H6907 on page 18.

No. 57H6683 Fits any standard $2\frac{1}{2}\times 6$ -inch dry cell. Exceptionally good device because of band which clamps around battery, taking weight off terminals. Plain finish and plain glass lens. Length over all, $5\frac{1}{2}$ inches; $4\frac{1}{2}$ inches high. Shipping weight, about 1 lb.

Price, without battery.....75c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6684 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6685 Fits any standard $2\frac{1}{2}\times 6$ -inch dry cell. Exceptionally good device because of band which clamps around battery, taking weight off terminals. Plain finish and plain glass lens. Length over all, $5\frac{1}{2}$ inches; $4\frac{1}{2}$ inches high. Shipping weight, about 1 lb.

Price, without battery.....75c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6686 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6687 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6688 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6689 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6690 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6691 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6692 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6693 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6694 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6695 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6696 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6697 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6698 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6699 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6690 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6691 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6692 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6693 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6694 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6695 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Price, without battery.....44c

For extra batteries see No. 57H6092 on page 18.

For extra lamps see No. 57H6911 on page 18.

No. 57H6696 Battery Flash Light Attachment. Nicely nickel plated and polished, with well finished lens 2 inches in diameter.

Flash Light Batteries.

You will find listed below genuine EVEREADY TUNGSTEN batteries. These are high grade batteries, which are widely advertised. We also call your attention to the Shurlite batteries listed at the bottom of this page. These are our own brand, high grade batteries. Satisfactory service guaranteed. For flash lights see pages 858 and 859.

No. 57H6705 Tungsten Three-Cell Tubular Battery. Diameter, 1 $\frac{1}{8}$ inches; length, 7 inches. Fits the following flash lights:

No. 57H6635 No. 57H6668 No. 57H6655
No. 57H6590 No. 57H6662 No. 57H6653
No. 57H6570 No. 57H6592 No. 57H6646
No. 57H6656 No. 57H6564 No. 57H6588
No. 57H6580

Shipping weight, 12 oz. Price... **30c**

No. 57H6706 Tungsten Double Cell Tubular Battery. Diameter, 9 $\frac{1}{16}$ inch; length, 4 inches. Fits flash lights:

No. 57F6682 No. 57H6595

Shipping weight, 3 oz. Price... **20c**

No. 57H6753 Tungsten Three-Cell Tubular Battery. Diameter, 1 inch; length, 7 inches. Fits Flash Light Candle No. 57H6614. Shipping weight, 9 ounces. Price..... **34c**

No. 57H6790 Tungsten Double Cell Tubular Battery. Diameter, 1 $\frac{1}{8}$ inches; length, 4 $\frac{1}{4}$ inches. Fits the following flash lights:

No. 57H6634 No. 57H6664 No. 57H6578
No. 57H6638 No. 57H6643 No. 57H6650
No. 57H6667 No. 57H6568 No. 57H6660
No. 57H6562 No. 57H6654 No. 57H6642

No. 57H6586

Shipping weight, 8 ounces. Price..... **23c**

No. 57H6791 Tungsten Double Cell Tubular Battery. Diameter, 1 inch; length, 3 $\frac{3}{4}$ inches. Fits the following flash lights:

No. 57H6656 No. 57H6612 No. 57H6640 No. 57H6650

No. 57H6576

Shipping weight, 4 ounces. Price..... **23c**

No. 57H6700 Tungsten Double Cell Battery. 9 $\frac{1}{16}$ inch thick, 1 $\frac{1}{8}$ inches wide, 1 $\frac{1}{8}$ inches high. Fits the following flash lights:

No. 57H6601 No. 57H6615

Shipping wt., 2 oz. Price... **23c**

No. 57H6703 Tungsten Triple Cell Battery. 3 $\frac{1}{4}$ inch thick, 2 $\frac{1}{16}$ inches wide, 2 $\frac{1}{8}$ inches high. Fits the following flash lights:

No. 57H6605 No. 57E6629 No. 57E6628 No. 57F6697

Shipping weight, 6 ounces. Price..... **27c**

No. 57H6715 Tungsten Five-Cell Battery. Diameter, 1 $\frac{1}{8}$ inches; length, 11 $\frac{1}{4}$ inches. Fits Flash Light No. 57H6657.

Shipping weight, 1 $\frac{1}{4}$ pounds. Price... **60c**

No. 57H6731 Tungsten Five-Cell Battery. 1 $\frac{1}{2}$ inches thick, 3 inches high, 6 $\frac{1}{2}$ inches wide. To be used with cap light No. 57H6606.

Shipping weight, 1 $\frac{1}{2}$ pounds. Price... **65c**

No. 57H6734 Tungsten Triple Cell Battery. 1 $\frac{1}{8}$ inches thick, 4 inches wide, 3 inches high. Fits the following flash light: No. 57H6696.

Shipping weight, 1 pound. Price... **34c**

No. 57H6735 Tungsten Triple Cell Battery. 1 $\frac{1}{8}$ inches thick, 4 inches wide, 3 inches high, with terminals for connection with cap light No. 57H6607.

Shipping weight, 1 pound. Price... **40c**

No. 57H6750 Tungsten Double Cell Battery. 5 $\frac{1}{2}$ inch thick, 1 $\frac{1}{16}$ inch wide, 2 $\frac{1}{4}$ inches high. Fits the following flash lights:

No. 57H6680 No. 57H6616 No. 57H6602

Shipping weight, 3 ounces. Price... **23c**

No. 57H6751 Tungsten Triple Cell Battery. 1 $\frac{1}{16}$ inch thick, 2 inches wide, 2 $\frac{1}{4}$ inches high. Fits the following flash lights:

No. 57H6617 No. 57H6603

Shipping weight, 4 ounces. Price... **27c**

No. 57H6792 Tungsten Double Cell Battery. 9 $\frac{1}{16}$ inch thick, 1 $\frac{1}{8}$ inches wide, 2 $\frac{1}{8}$ inches high. Fits the following flash lights:

No. 57E6624 No. 57E6625

Shipping weight, 4 oz. Price... **23c**

No. 57H6710 Tungsten Five-Cell Battery. Diameter, 3 $\frac{1}{8}$ inches; height, 3 inches. Fits Tungsten Search Lantern No. 57H6675.

Shipping weight, 1 $\frac{1}{2}$ lbs. Price... **65c**

No. 57H6719 Tungsten Five-Cell Battery. 2 $\frac{3}{4}$ inches thick, 3 inches high, 4 inches wide. Fits Lantern No. 57H6679.

Shipping weight, 2 pounds. Price... **65c**

No. 57H6752 Three-Cell Tungsten Battery. 1 $\frac{1}{2}$ in. thick, 4 in. wide, 3 $\frac{1}{16}$ in. high. Fits the following flash light: No. 57H6608.

Shipping weight, 1 lb. 1 oz. Price... **40c**

No. 57H6775 Tungsten Three-Cell Battery. 2 $\frac{1}{2}$ inches thick, 3 inches high, 2 $\frac{1}{4}$ inches wide. Fits Flash Light No. 57H6676.

Shipping weight, about 2 lbs. Price... **40c**

No. 57H6092 Stand-By Dry Battery. Fits the following lanterns, flash lights, battery attachments and clocks:

No. 57H6693 No. 57H6678 No. 57H6683 No. 57H6694

No. 57H6688 No. 57H6684 No. 57H6699 No. 57H6685

No. 57H6690 No. 57H6072 No. 57H6078

Shipping weight, 2 $\frac{1}{2}$ pounds. Price, each..... **26c**

BATTERIES AND LAMPS

Standard Dry Cells, Multiple, Wet and Gravity Batteries.



We offer genuine MAZDA Flash Light Lamps, which are very high grade. Mazda lamps give a white light and consume far less current than a carbon lamp, giving a greater amount of light from one battery. If your flash light does not work, do not lay all the blame on the battery, as the lamp may be broken or burned out. The actual candle power of the lamp, as stated below, is greatly magnified by the reflector and lens when used in the flash light. It is advisable to have an extra lamp available.

No. 57H6900 Mazda Lamp, 2.5 volts, $\frac{3}{4}$ -candle power. Fits the following flash lights:

No. 57H6601 No. 57H6615
No. 57H6682 No. 57H6595

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6902 Mazda Lamp, 3.8 volts, 1 $\frac{1}{2}$ -candle power. Fits the following flash lights:

No. 57H6603 No. 57H6617

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6903 Mazda Lamp, 2.7 volts, 1-candle power. Fits the following flash lights:

No. 57H6667 No. 57E6625
No. 57E6624 No. 57H6612

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6904 Mazda Lamp, 3.8 volts, 1 $\frac{1}{2}$ -candle power. Fits the following flash lights:

No. 57H6628 No. 57F6697
No. 57H6685 No. 57E6629

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6905 Mazda Lamp, 3.8 volts, 1 $\frac{1}{2}$ -candle power. Fits the following flash lights:

No. 57H6635 No. 57H6688
No. 57H6590 No. 57H6662 No. 57H6653
No. 57H6570 No. 57H6592 No. 57H6646
No. 57H6556 No. 57H6594 No. 57H6580

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6906 Mazda Lamp, 2.7 volts, 1-candle power. Fits the following flash lights:

No. 57H6655 No. 57H6650
No. 57H6640 No. 57H6756

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6907 Mazda Lamp, 2.9 volts, 1-candle power. Fits the following flash lights:

No. 57H6634 No. 57H6650
No. 57H6562 No. 57H6664 No. 57H6654
No. 57H6586 No. 57H6660 No. 57H6638
No. 57H6568 No. 57H6578 No. 57H6642

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6908 Mazda Lamp, 4 volts, 1 $\frac{1}{2}$ -candle power. Fits the following flash lights and lantern:

No. 57H6607 No. 57H6676
No. 57H6608 No. 57H6696

Shipping weight, 2 ounces. Price..... **10c**

No. 57H6910 Mazda Lamp, 1 $\frac{1}{2}$ volts, $\frac{3}{4}$ -candle power. Fits the following flash lights and clocks:

No. 57H6688 No. 57H678
No. 57H6691 No. 57H6689
No. 57H6707 No. 57F6692

Shipping weight, 2 oz. Price... **12c**

No. 57H6911 Mazda Lamp, 1 $\frac{1}{2}$ volts, $\frac{3}{4}$ -candle power. Fits the following flash lights:

No. 57H6683 No. 57H6684
No. 57H6690 No. 57H6077
No. 57H6078

Shipping weight, 2 ounces. Price... **12c**

No. 57H6912 Mazda Lamp, 6 volts. Will fit Lantern No. 57F6695. Shipping weight, 2 ounces. Price... **25c**

No. 57H6913 Mazda Lamp, $\frac{1}{2}$ volt. Will fit No. 57H6684 battery attachment. Shipping weight, 2 ounces. Price... **15c**

No. 57H6914 Gas Lighter Tip for No. 57H6638 range lighter. Shipping weight, 2 ounces. Price... **16c**

No. 57H6915 Mazda Lamp, 3 volts. For lantern and vehicle light. No. 57H6693 light. Shipping weight, 2 ounces. Price... **16c**

No. 57H6916 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6917 Mazda Lamp, 4 volts. 1 $\frac{1}{2}$ -candle power. Fits Tungsten Candle No. 57H6614. Shipping wt., 3 oz. Price... **35c**

No. 57H6918 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6919 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6920 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6921 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6922 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6923 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6924 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6925 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6926 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6927 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6928 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6929 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6930 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6931 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6932 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6933 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6934 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6935 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6936 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6937 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6938 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6939 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6940 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6941 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6942 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6943 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6944 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6945 Mazda Lamp, 6.2 volts. Fits lantern and flash lights. No. 57H6779 No. 57H6675
No. 57H6606 No. 57H6657

Shipping weight, 3 ounces. Price... **10c**

No. 57H6946

Voltmeters and Ammeters.

Every battery owner should use our genuine Eveready instruments which are carefully calibrated, dead beat and very accurate. As they are no larger than an ordinary watch, they can be carried in the vest pocket, and are very necessary in testing all batteries except storage cells.

No. 57H6101 Eveready Voltmeter. Reads, 0 to 10 volts. Shipping weight, 7 ounces. Price.....**70c**

No. 57H6102 Eveready Ammeter. Reads, 0 to 35 amperes. Shipping weight, 7 ounces. Price.....**65c**

No. 57H6103 Eveready Volt-Ammeter, two scales, registering either voltage or amperage. Reads, 0 to 10 volts and 0 to 35 amperes. Shpg. wt., 7 oz. Price.....**85c**

Miniature Electric Lamp Outfit, \$1.05.



No. 57H6730

An interesting toy. Also useful for lighting dark closets, etc. Consists of three cells of Red Label dry battery, a 1½-candle power miniature Mazda tungsten electric lamp, a receptacle, switch, and 30 feet of insulated wire. Shipping weight, 7½ lbs. Price.....**\$1.05**

Push Buttons.

No. 57H6010 Wood Push Buttons. High grade springs, porcelain center. Shipping wt., 3 ounces.

Price.....**9c**

No. 57H6011 Brass Push Button, stamped plain design, finished. Price each.....**10c**

No. 57H6012 Solid Cap Stamped Brass Buttons. Price, each.....**15c**

Anti-Wood Push Buttons. A metal push button, cheaper than wood. Very neat and serviceable. Shipping weight, 3 ounces. Price, each.....**7c**

Per dozen.....**75c**

Wood Base Switches.

For use on telephones, closed circuit bell systems, burglar alarms and battery circuits in general. Hardwood base with rubbed oil finish. Shipping weight, 3 ounces.

Price, 1-point.....**8c**

Price, 2-point.....**9c**

Price, 3-point.....**10c**

No. 57H6035 Price, 4-point.....**11c**

Powerful Electro Magnet.
No. 57H6200 Operates by 6 batteries, providing a practical demonstration of the principles of magnetism. With one good cell of dry battery this magnet has a lifting power of 2 pounds; with two cells it will lift about 5 pounds, and with four cells, if carefully handled, it will lift over 10 pounds. Shipping weight, 1 pound. Price, with two 3-foot conducting cords, but without batteries.....**\$1.50**

Our Special Wet Battery.
No. 57H6050 Our Special Wet Battery gives excellent service for telephones, door bells, etc. This is sal ammoniac cell, easily and cheaply recharged when exhausted. It consists of glass jar, a large circular carbon electrode, stick zinc electrode and one charge of sal ammoniac. Shipping wt., 4 lbs.

Price, complete.....**40c**

No. 57H6051 Rectangular Stick Zinc (shipping wt., about ¼ lb.).....**35c**

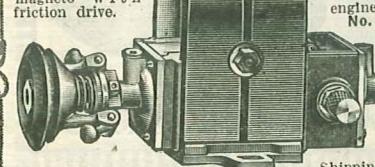
Price, per dozen (shipping weight, about 3 pounds).....**\$1.20**

No. 57H6052 Carbon for our Special Wet Battery. Shipping weight, about 1½ pounds. Price.....**20c**

No. 57H6054 Sal Ammoniac. Price, per pound (shpg. wt., abt. 1½ lbs.).....**20c**

No. 57H6055 Sal Ammoniac. Price, per package sufficient for one charge (shipping wt., about 6 oz.).....**10c**

This illustration shows our make and break magneto with friction drive.



Bells, Buzzers, Transformers, Ignition Material and Miscellaneous Electrical Supplies.

Miniature Mazda Electric Lamps.

Mazda Lamps give much greater candle power than the old style carbon filament lamps and greatly increase the life of the battery, as they draw less current. These prices do not include receptacles. Shipping weight, 3 ounces.

Catalog No.	Volts	Amps	Ca'dl Dry Cells	Price
57H611	5	.45	1½	3 12c
57H611	6	.35	2	5 12c
57H611	7	.30	2	6 20c
57H611	8	.25	4	5 20c
57H611	9	.60	4	7 23c

No. 57H6120 Round Miniature Lamp Receptacle. Will fit any lamp. Shipping weight, 2 ounces. Price.....**7c**

No. 57H6122 Miniature Weatherproof Pendant Sockets. Will fit any miniature lamp. Shpg. wt., 2 oz. Price.....**10c**

Quick Action Dry Battery Connector.

No. 57H6105 Made from one piece of soft copper covered with insulating tape. An excellent connector. Shipping weight, 4 oz. Per package of ten.....**12c**

Famous Bulldog Dry Battery Connectors.

No. 57H6106 Snap-on in a second and easily removed; prevents all ignition troubles caused by loose connections. Shipping wt., 2 oz. Price, each.....**3c**

No. 57H6107 Shpg. wt., 5 oz. Price, package of ten.....**25c**

Magnet Wire, B. & S. Gauge.
Belden Double Cotton Covered Magnet Wire. One piece only on a spool. Insulation and wire are uniform. State size and weight spool wanted.

No. 57H7907

Size	1-Oz. Spool	2-Oz. Spool	4-Oz. Spool	8-Oz. Spool	1-Lb. Spool
16					\$0.78
18					.84
20					.89
22					.99
24					.99
30	20c	32c	50c	87c	1.44
32	22c	35c	53c	93c	1.55
36	30c	50c	85c	1.55	2.76

Belden enameled magnet wire. One piece only on a spool. State size and weight spool wanted.

No. 57H7908

Size	2-Oz. Spool	4-Oz. Spool	8-Oz. Spool	1-Lb. Spool
16				\$0.75
18				.88
20				.82
22				.87
24	24c	33c	57c	95c
26	26c	37c	60c	1.00
28	29c	40c	65c	1.08
30	31c	44c	78c	1.22
32	34c	48c	83c	1.28
34	36c	54c	94c	1.55
36	42c	65c	1.25	2.00

NOTE—Above prices include the spool and cost of spooling. The wire is furnished only on size spools given.

Battery Switches.

Recommended for use with stationary, portable and marine gasoline engines, telephone, telegraph, bell work, etc. Made with brass contacts and plain brass handle. Shpg. wt., 3 oz.

No. 57H6041 Single Throw Switch.....**9c**

No. 57H6042 Double Throw Switch, for use with two sets of batteries or one set of batteries and magneto. Price.....**16c**

Make and Break Coil.

No. 57H6518 Suitable for use with any engine of make and break ignition. Extensive tests proved this coil to be the most efficient of any coil we tested. Mounted in a strong steel case, 2½x2½x6 inches. Convenient size, it takes up approximately the same space as a dry battery and is easily inserted in the battery box. Shipping weight, 3 pounds. Price.....**50c**

No. 57H6519 Make and Break Coil, same as above, but equipped with switch for making and breaking the circuit. Price.....**60c**

Permanent Horseshoe Magnets.

Made especially for us by an American manufacturer.

Constructed of fine quality steel, and we guarantee them to be more powerful and to retain their magnetism longer than the magnets formerly imported from Europe.

We have discontinued the sale of cheap magnets entirely, as they do not give satisfaction. State length, shpg. wt., in. price.

No. 57H6201

Lghth., Shpg. In.	Wt.	Price	Lghth., Shpg. In.	Wt.	Price
3	3 oz.	12c	8	1½ lbs.	\$0.75
4	6 oz.	20c	10	2½ lbs.	1.25
6	1½ lbs.	35c	12	4½ lbs.	1.90

GASOLINE ENGINE MAGNETOS.

Made with two large powerful magnets and completely enclosed armature, affording protection from dirt and moisture. Bearings lubricated with wick oilers with removable caps over oil holes.

Equipped with ball bearing governor, which regulates the speed of the magneto, preventing burning out.

Once mounted on the engine, they require practically no attention aside from oiling about once in two months and renewal of brushes about once in from twelve to eighteen months.

These magnos are not suitable for use on automobiles.

NOTE—Make and break ignition is also known as "wiper" or "hammerbreak" ignition. If your engine uses a spark plug it is jump ignition. If it does not use a spark plug it is make and break ignition.

No. 57H6551 Friction Drive Magneto for make and break ignition, without coil. Price.....**\$7.25**

No. 57H6552 Friction Drive Magneto, for make and break ignition, with coil mounted in magnets. Price.....**\$8.25**

No. 57H6553 Belt Drive Magneto, for make and break ignition, without coil. Price.....**\$8.00**

No. 57H6554 Belt Drive Magneto, for make and break ignition, with coil mounted in the magnets. Price.....**\$9.00**

Shipping wt. of all make and break magnos, 18 lbs.

NOTE—We do not furnish jump spark magnos with coil mounted in the magnets.

Shipping wt. jump spark magnos with coil mounted in the magnets.

Electric Bell Outfit.

For Door and Bell Service. Consists of one Red Label dry battery, one brass push button, one 3-inch bell, 75 feet of annunciator wire and necessary staples. Directions for installing furnished. Weight, 4½ pounds, when packed. No. 57H6022 Price.....**95c**

Buzzer.

No. 57H6007 The same high grade construction as the bells. They make a comparatively low buzzing sound and are used in place of bell where the loud ringing is not desirable. Directions for installing furnished. Shipping wt., 10 oz. Price, each.....**29c**

Electric Door Bells.

No. 57H6000 High grade bell, 3-inch gong, efficient, reliable and long ringing, cover stamped sheet steel, black enameled. Guaranteed to ring clearly through 300 feet of No. 18 annunciator wire, (150 feet from bell to battery) on one cell of battery. To get maximum sound, two batteries should be used. Add one cell for each additional 50 feet of wire. Suitable for use with transformer. Shipping wt., 13 oz. Price, each.....**30c**

No. 57H6002 Same as above, but with 4-inch gong. Not suitable to use with transformer. Shipping weight, 1 pound. Price, each.....**38c**

No. 57H6003 Transformer bell with 4-inch gong. Shipping weight, 1 pound. Price, each.....**\$1.48**

NOTE—These bells cannot be used with telephones.

See page 866 for telephone bells

Large Bells.

Strongly made bells of a fine quality throughout, guaranteed to give satisfactory service. Pressed steel base and cover black enameled. Powerful magnets, quick acting adjustable armature. Not suitable to use with transformer.

No.	Gong	Shpg. Wt.	Price
57H6015	6 in.	8 lbs.	\$3.35
57H6016	8 in.	9½ lbs.	6.95
57H6017	10 in.	11 lbs.	9.95
57H6018	12 in.	14 lbs.	10.60

Large bells, same as above, but made to use with transformer.

No.	Gong	Shpg. Wt.	Price
57H6019	6 in.	6 lbs.	\$7.60
57H6020	8 in.	8½ lbs.	9.45

Bell Ringing Transformer.

No. 57H6005 Electric door bells, buzzers or door openers may be operated by the ordinary city (110-volt alternating) current, thus doing away entirely with the use of batteries. The transformer is simply connected into the lighting circuit, lasts indefinitely, and once installed needs no further attention. Size, 2½ inches wide by 2 inches thick by 6 inches long. Directions for installing furnished. Shipping weight, 2 pounds 13 ounces. Price.....**\$1.00**

Bell Ringing Transformer.

No. 57H6006 Suitable for all the work to which our No. 57H6005 is adapted, and in addition has a range of three voltages, namely 6, 8 and 14. Suitable for larger bells, longer distances, door openers. It is 2½ inches wide by 4½ inches high and 1¾ inches thick. Has a strong metal case, black enameled finish. Directions for installing furnished. Shipping weight, about 3 pounds. Price, each.....**\$1.20**

Electric Door Opener.

No. 57H6009 Fit this opener into the door casing. Pressing the button upstairs or in the back part of the house will permit the door to be opened. As easily installed as a door bell. Will operate from two dry batteries or transformers above. Shipping weight, about 2 pounds. Price.....**\$1.45**

Jump Spark Coil.

No. 57H6511	High grade, suitable for use on any one-cylinder engine with a spark plug, regardless of horse power. It gives a hot, fat spark with very little current consumption, making it most effective and economical. Best results with four cells of battery. Shipping weight, 5 pounds. Price..... \$2.65
No. 57H6552	Friction Drive Magneto, for make and break ignition, with coil mounted in magnets. Price..... \$8.25

No. 57H6553 Friction Drive Magneto, for make and break ignition, with coil mounted in magnets. Price.....**\$8.00**

No. 57H6554 Belt Drive Magneto, for make and break ignition, with coil mounted in the magnets. Price.....**\$9.00**

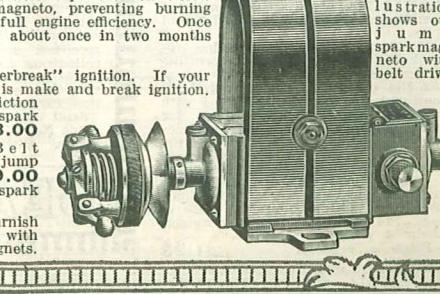
Shipping wt., jump spark magnos, 20 pounds.

NOTE—We do not furnish jump spark magnos with coil mounted in the magnets.

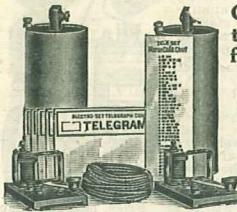
Shipping wt. jump spark magnos with coil mounted in the magnets.

This illustration shows our jump spark magneto with belt drive.

If Parcel Post Shipment Include Amount of Charges Extra. See Page 766.



Learn to Be a Telegraph Operator.



Complete Two-Station Telegraph Sets for \$1.15 and \$2.45.

Consist of two boys' practical and complete telegraph sets with battery, wire, code chart, instructions and miniature telegraph blanks, all for \$1.15. The two instruments are well made with adjustable sounding levers, nickel plated and mounted on a neat wooden base. The stations may be set up in different parts of a house, different buildings, etc. The instructions are easy to follow; dots and dashes are very clear. A neat and efficient outfit that many boys have been waiting for.

No. 57H6464 Complete Two-Station Telegraph Set, with one dry cell, 25 feet insulated copper wire and instructions. Shipping weight, about 3½ pounds. Price.....\$1.15

No. 57H6465 Same as No. 57H6464, but with two dry cells and 300 feet of wire. Shipping weight, about 6 pounds. Price.....\$2.45

If you want additional wire for use with the above instruments or for the Dry Battery Line Sets listed below, order No. 57H7900 Annunciator Wire No. 18, page 19.

Dry Battery Line Sets.



No. 57H6470

Dry Battery Line Set No. 1 consists of two of our Improved 4-Ohm Instruments No. 57H6461, with two instruction books, two 1½ ampere 67H6000's, two push buttons, two battery switches, four dry batteries and wiring diagrams for connecting. The circuit requires only two wires; it is a full metallic circuit and are not in use except when sending or receiving, thus avoiding short circuits or grounds on the line, which would run down the batteries. Calling can be accomplished from both ends of the line. Under such a scheme the dry batteries give very good service and last a long time. This set will operate satisfactorily over 1,000 feet, without the four batteries we furnish, or, by the addition of more batteries, over much longer lines. Shipping weight, about 13½ pounds. Price, complete.....\$5.00

No. 57H6471 Dry Battery Line Set No. 2. A complete double set with four dry batteries and two battery switches, but without push button or bells. This set calls with the instrument, but batteries are not in use except when sending or receiving. Shipping weight, about 12½ pounds. Price.....\$4.25

Beginner's Wireless Practice Set, \$1.23.



No. 57H7100 This set consists of a wireless key and buzzer mounted on a polished wood base. The key has black enameled frame, nickel plated lever and adjusting screws. The buzzer is nickel plated and reproduces the high pitched sounds of the wireless stations accurately. The three binding posts are so connected that the set may be used five different ways.

For the beginner this set has remarkable value. It not only provides an excellent method of quickly learning the code, but after the code is mastered the key may be used with a spark coil and the buzzer for testing detectors. By using our telephone induction coil No. 57H5657 the Practice Set may be used for class instruction using wireless phones.

Complete with one dry cell, 3 feet insulated wire, diagram of connections, code chart and instructions. Size of base, 7x4½ inches. Shipping weight, about 4 pounds. Price.....\$1.23

TELEGRAPH INSTRUMENTS

Private Line Set.



\$2.55
4-Ohm.

No. 57H6474 4-Ohm Private Line Set. Consists of our Aluminum Lever Giant Sounder No. 57H6480, and our Standard Steel Lever Key No. 57H6485, mounted on one base of polished hardwood. The quality and finish of this set is high grade throughout. Shipping weight, 2 pounds 13 ounces. Price.....\$2.55

No. 57H6475 20-Ohm Private Line Set. Same as above, except that sounder magnets are wound to a higher resistance to increase the sensitiveness. Two of these instruments can be operated from two dry batteries through a line resistance of more than 25 ohms, which is equivalent to a mile of 12-gauge iron wire. The distance can be extended by increasing the battery power. Shipping weight, 2 pounds 13 oz. Price.....\$2.75

Become an Expert in Wireless.

Our Improved Learner's Telegraph Outfit,

\$1.75 and \$2.35.

Instruments, \$1.55 and \$1.75.

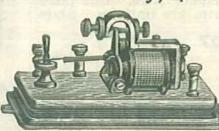
No. 57H6451 Our Improved Learner's Telegraph Outfit consists of a full size solid trunnion key, and a 4-ohm sounder mounted on a polished hardwood base. The sounder has a metallic base plate raised above the wood by three lugs, allowing a resonating air space, and resulting in a clear, loud sound. Sounder lever, sounding posts and key switch lever are of lacquered brass. Key lever is nickel plated and buffed. All parts are adjustable. A small instruction book, dry battery and connecting wire are included. Shipping weight, 5 pounds. Price.....\$1.75

No. 57H6453 Our Special Learner's Telegraph Outfit includes an Improved 4-Ohm Learner's Instrument, described above, battery and connecting wire. A copy of "The Telegraph Instructor," a cloth bound 286-page textbook of telegraphy, is included instead of the small instruction book. Shipping weight, 5¾ pounds. Price.....\$2.35

No. 57H6461 Improved 4-Ohm Learner's Telegraph Instrument, without battery or connecting wire. Shipping weight, 2½ pounds. Price.....\$1.55

No. 57H6463 Improved 20-Ohm Learner's Telegraph Instrument, the same as the 4-ohm instrument except that sounder is wound to 20 ohms to increase its sensitiveness. Shipping weight, 2 pounds 11 ounces. Price.....\$1.75

Standard Relay, \$1.95.



No. 57H6488 20-Ohm Standard Relay. This relay is very sensitive, nicely adjustable and handsomely finished instrument. Frame is lacquered brass; the armature is nickel plated. Mounted on a polished hardwood base with sub-base of black enameled cast iron. Suitable for telegraph lines up to 10 miles in length, and for burglar and fire alarm systems. Shipping weight, 2½ pounds. Price.....\$1.95

Legless Key, \$1.10.



No. 57H6485 Standard Steel Lever Key, legless. Steel lever and switch strap are heavily nickel plated and buffed. Black composition key and switch knobs. Fully adjustable. Shipping weight, 10 ounces. Price.....\$1.10

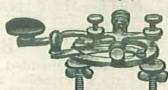
Giant Sounder, 4-Ohm, \$1.65.



No. 57H6480 4-Ohm Giant Sounder. This is a rapid, loud, aluminum lever sounder with a square brass frame. Magnets are covered with polished hard rubber and leads are thoroughly insulated. The sounder is mounted so that a resonating air space is maintained between the base plate and the polished hardwood mounting board. All parts are adjustable. Shipping weight, 1½ lbs. Price.....\$1.65

No. 57H6481 20-Ohm Giant Sounder. Same as No. 57H6480, except that magnets are wound to a higher resistance to increase its sensitiveness over longer lines. Shipping weight, 1½ pounds. Price.....\$1.85

Steel Lever Key, \$1.20.



No. 57H6486 Standard Steel Lever Key with legs. Same as No. 57H6485, except that it is made with legs, 1¾ inches long, which pass through table clamping the key and serving as binding posts. Shipping weight, 12 ounces. Price.....\$1.20

National Automatic Telegraph Transmitter.



The National Automatic Telegraph Transmitter consists of a clockwork motor, a record table and twenty-seven tape records comprising beginning exercises, newspaper reports, service messages and numerous others, selected and graded so as to form a students' course in telegraphy. The tape records are drawn by the clockwork through a device for opening and closing the telegraph circuit. The speed can be regulated. A copy of "The Telegraph Instructor," a cloth bound 286-page textbook of telegraphy, is included. Any good key and sounder can be used with this instrument, hence we quote both with and without telegraph sets.

No. 57H6490 National Automatic Telegraph Transmitter with high grade key and giant sounder mounted on one polished oak base, two dry batteries and twenty-seven records. Shipping weight, 21 pounds. Price.....\$20.00

No. 57H6491 National Automatic Telegraph Transmitter without key, sounder or batteries. Shipping weight, 14¾ pounds. Price.....\$16.00

FREE CATALOG OF WIRELESS APPARATUS

A book every amateur should have. Eighty pages of interest to wireless experimenters. Illustrates wireless apparatus of very high quality, which is guaranteed to satisfy you in every respect. Our prices are low. When you receive your copy of this book, we are sure you will agree with us that we are offering a very complete line of keys, spark coils, condensers, spark gaps, switches, transformers, detectors, minerals, tuning coils, receivers, sending sets, receiving sets, and many miscellaneous items from which you can make a selection to fit your needs. We'd like to send you a copy of this fine book free of charge. If you will mail us a post card bearing your name and address and the words "Send me a copy of your free Catalog of Wireless Apparatus No. 655," we will forward a copy with our compliments. Write for it today. Remember, it's free.



SEARS, ROEBUCK AND CO. CHICAGO



Home and Shop Phones

Can you talk from your home to your neighbors, to your barn or garage, from your bedroom to the kitchen downstairs, from your house to your office, from your home to your helpers?

Save the thousands of needless steps and the many lost minutes by installing telephones. Our intercommunicating battery phones are intended for just this kind of service, where the distance between telephones is not great, but the number of times you want to talk between these points will make these telephones a great convenience.

Run a telephone line to your neighbor's house if the distance is short. Enjoy a friendly chat in your leisure moments when the time or weather makes a personal visit impracticable.

These telephones are easily installed and directions are furnished with each instrument. You will be delighted to find how easily these telephones can be put up and connected and with the resulting conveniences. If you want help in figuring out what is needed for your telephone line or in determining the cost, we will be glad to have you write us.



Hand Telephone for Two-Station Line

A very compact, thoroughly high grade hand telephone that can be placed on a table or hung on the wall.

The rectangular box contains a clanging buzzer and has a hook for hanging up the phone. However, it is not necessary to hang it up to shut off the phone; just lay it on the table. If you want to call the other station, just press the little button in the handle. It can be used in pairs or in connection with Wall Phone No. 57H5590 at right. Order four dry batteries and enough wire, No. 57H7919 or No. 57H7920, page 29, to run between the two stations. It will operate 600 feet with No. 18 gauge wire or longer distances with larger wire.

No. 57H5595 Two-Station Hand Telephone Sets. Shipping weight, 5 pounds.

Price, per pair, without batteries or wire.....\$10.60

No. 57H5596 Two-Station Hand Telephone Sets.

Price, per pair, with four Stand-by dry batteries, but no wire.....\$11.60

No. 57H5593½ One Hand Set and One Wall Telephone. Shipping weight, 5½ pounds. Price, without batteries or wire.....

\$8.47

No. 57H5590 Two-Station Wall Telephones. Shipping weight, 5½ pounds.

Price, per pair, without batteries or wire.....\$6.35

No. 57H5591 Two-Station Wall Telephones. Shipping weight, 16 pounds. Price, per pair, with four Stand-by dry batteries, but no wire.....\$7.35

No. 57H5593½ Wall Telephone and One Hand Telephone. Shipping weight, 5½ pounds. Price, without batteries or wire.....\$8.47



Wall Telephone for Two-Station Line

A very efficient and nice appearing telephone built for single line service with a station at each end. The material, workmanship and finish are strictly high grade throughout. Will not detract from the appearance of any room in which you may install it. It will ring satisfactorily over

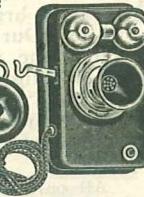
lines of 600 feet on using our No. 57H7919 or No. 57H7920 Twisted Pair Wire (only one length needed), and four dry batteries, shown on page 18 (longer distances require larger gauge wire). One of these can be used with one of the hand telephones, No. 57H5595, at the left.

No. 57H5590 Two-Station Wall Telephones. Shipping weight, 5½ pounds.

Price, per pair, without batteries or wire.....\$6.35

No. 57H5591 Two-Station Wall Telephones. Shipping weight, 16 pounds. Price, per pair, with four Stand-by dry batteries, but no wire.....\$7.35

No. 57H5593½ Wall Telephone and One Hand Telephone. Shipping weight, 5½ pounds. Price, without batteries or wire.....\$8.47

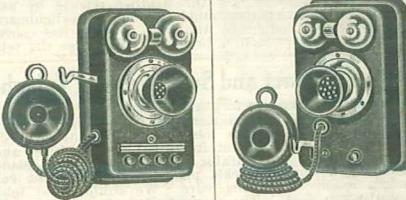


Wall Telephones for Several Stations

Four-Button Type.

This telephone is the same as No. 57H5598 shown to the right, except that it has four buttons and can be used for a five-station line. Pressing one of the buttons at your station rings the bells on only one of the other four phones. For the necessary wire, measure from the first station to the last in a continuous line, touching at all the stations. Multiply the total distance by the number of stations plus three. For instance, for four telephones, multiply the distance by seven. Order wire No. 57H7900 or No. 57H7902 on page 19. One impedance coil such as No. 57H5650 shown below and five dry cells are required for a system of three to five phones. All parts of these phones are carefully designed, correctly made, and beautifully finished in dull black and nickel.

No. 57H5599 Four-Button Wall Telephone. Shipping weight, about 3 pounds. Price, each, without wire, batteries or impedance coil.....\$5.30



Two-Station Phones,

\$3.75 a Pair



No. 57H5565 These telephones are not as well built nor as nicely finished as ones listed above. Give service between any two points not over 500 feet apart. Strongly made, remarkably efficient, very compact and finished in black enamel and nickel plate. Easily installed as a door bell—four batteries (any kind, wet or dry), and only two wires required.

Use wire such as No. 57H7920 on page 19, or No. 57H7920 on page 29. We furnish wiring directions. Shpg. wt., 5 lbs. Price, per pair, without batteries.....\$3.75

No. 57H5566 Battery Phones. Shipping wt., 16 lbs. Price, per pair, with four Red Label Dry Batteries.....\$4.65

Impedance Coils

No. 57H5650 For use with our No. 57H5580, No. 57H5585, No. 57H5598 and No. 57H5599 Home Telephones. One coil required to each system of three to six of the above phones. Shipping wt., about 12 oz. Price. 60¢



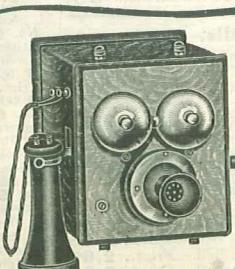
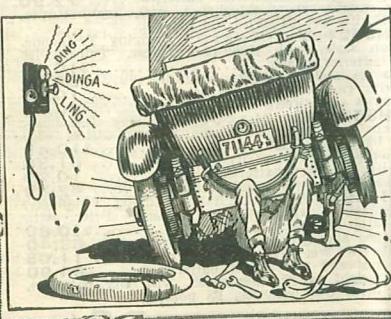
Intercommunicating Phones

No. 57H5580 Look exactly like our No. 57H5563 pictured at the left. Constructed to allow three to six phones on a line. All bells ring together, hence different signals should be employed. For the necessary wire measure from the first station to the last on a continuous line touching at all stations and multiply the total distance by 4. Order annunciation wire such as No. 57H7900 on page 19. We furnish wiring directions. One impedance coil, described above, and four or five dry batteries also needed. Shipping weight, about 5 pounds.

Price, each, without batteries or coil.....\$2.20

Three to Six-Station Private Phones

No. 57H5585 An inexpensive but serviceable phone, not as well built as our No. 57H5599 nor as nicely finished. Equipped with five push buttons to ring five other phones within a distance of 500 feet. For the necessary wire, measure from the first station to the last in a continuous line touching at all the stations. Multiply the total distance by the number of stations, plus 3. For instance, for four phones multiply the distance by 7. Order wire No. 57H7900, on page 19. We send wiring directions. One impedance coil No. 57H5650, described at the left, and four or five dry batteries are also required. Shipping weight, about 5 lbs. Price, each.....\$3.20



Price, per pair (two telephones).....\$10.80

Four dry batteries included with each pair.

Series Magneto Phones, \$10.80 a Pair.

No. 57H5570 Built for longer distances than our battery phones and will operate satisfactorily on lines 5 miles in length. Can only be used in pairs. Can be used with copper or iron wire (see page 19 under No. 57H7900 and page 29 under No. 57H7914). Equipped with a high grade transmitter, receiver and a three-magnet pony generator. The cases are of oak, and metal parts are heavily nickel plated. Shipping weight, per pair, 46 pounds.



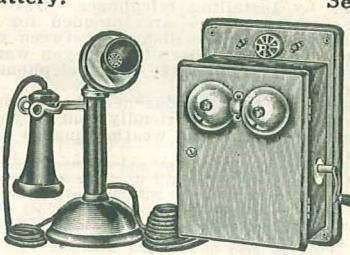
TELEPHONES

Magneto and Battery.

This desk set is made for us under our directions and combines excellent quality with a very low price. It is a standard bridging magneto telephone and can be used on any magneto telephone line with phones similar to the Compact or Southwestern bridging telephones shown on this page. Our prices include a complete desk telephone and generator and ringer box with a lightning arrester mounted on the box. We also furnish two dry batteries with each instrument. The generator and ringer box is highly polished oak and all exposed metal parts are finished in black enamel and nickel plate.

All parts of these telephones have been carefully designed, mechanically and electrically. The generators have $\frac{3}{4}$ -inch laminated magnets.

In ordering for a new line it is always best to select telephones all with the same ohms resistance. And, when adding telephones to a line, order those of the same ohms resistance as the ones already installed.



Our New Desk Telephone.

Series and Bridging.

No. 57H5540 Six-Magnet Bridging Telephone, Desk Type, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$11.85

6 telephones and twelve batteries..... 69.10

No. 57H5541 Six-Magnet Bridging Telephone, Desk Type, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$12.25

6 telephones and twelve batteries..... 71.45

No. 57H5542 Six-Magnet Bridging Telephone, Desk Type, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$12.55

6 telephones and twelve batteries..... 73.20

No. 57H5543 Six-Magnet Bridging Telephone, Desk Type, with 2,500-ohm ringer. Price, with two dry batteries, each..... \$12.75

6 telephones and twelve batteries..... 74.30

No. 57H5545 Five-Magnet Bridging Telephone, Desk Type, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$10.60

6 telephones and twelve batteries..... 61.25

No. 57H5546 Five-Magnet Bridging Telephone, Desk Type, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$10.80

6 telephones and twelve batteries..... 62.45

No. 57H5547 Five-Magnet Bridging Telephone, Desk Type, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$11.10

6 telephones and twelve batteries..... 64.50

No. 57H5548 Five-Magnet Bridging Telephone, Desk Type, with 2,500-ohm ringer. Price, with two dry batteries, each..... \$11.60

6 telephones and twelve batteries..... 67.25

Shipping weight of any of these desk telephones, about 45 pounds.

Use the Telephone.

If you have a telephone line in your neighborhood make arrangements to connect with it. Get into communication with your neighbors. Know what they are getting for their crops, their livestock or their dairy products. In case of an emergency, such as sickness or fire, use the telephone.

If you and your neighbors will get together you can construct a telephone line at a surprising low cost. Run a line to town. Know the market prices, buy and sell by telephone, get the weather reports by using the telephone. Hundreds of our telephones and many of our switchboards have gone to just such groups of neighbors who have learned the convenience, the saving and the sociability which it promotes. They use the telephone.

Concerning Our Compact and Southwestern Telephones.

Each telephone is made in one factory and repair parts can be furnished at any time. We equip all these telephones with our very latest solid black granular carbon transmitter—a loud, clear speaking long distance transmitter. Receivers are of the latest improved bi-polar type, and have concealed connections and heavy durable cord. Ringers are made with adjustable armatures and durable nickel plated frames and the coils are wound with modern enameled magnet wire. We equip these telephones with our long lever switch hook. The frame and hook are separated from the contact springs by proper insulation. Two-path carbon arrester offers a maximum of protection from lightning discharges.

Bridging telephones are the standard for party lines and we recommend their use. We carry the series type in stock for private line and city exchange work, where they give excellent service. Series and bridging telephones cannot be operated successfully on the same line.

All telephones on one line should be of the same resistance.

Push Buttons and Condensers.

Telephones equipped with push buttons can call Central without disturbing any of the other parties on that line, or can ring the other telephone on that line is equipped with a push button.

They can be used only on phone metallic (two-wire) lines where there is a central office or switchboard connecting several lines having bridging telephones only. When the telephones are equipped with condensers, the bells may be rung, although the receivers are off their hooks. Condensers can be used on metallic or grounded lines.

Any of our bridging telephones will be equipped with push buttons and condensers at the following prices:

No. 57H5601 Push Buttons, extra, per telephone. (Shipping weight, 2 ounces) ... 40c

No. 57H5602 Condensers, extra, per telephone. (Shipping weight, 7 ounces) ... 50c

No. 57H5603 Push buttons and condensers, extra, per telephone. (Shpg. wt., 8 oz.) 85c

Series Compact Telephones.	
Series telephones can be furnished in the Compact style of cabinet, as illustrated under Bridging Telephones. Series telephones are intended only for private lines between two parties, or for use on single party lines having a switchboard at a central office. They are equipped with three-magnet generators and 80-ohm ringers.	
No. 57H5530 Compact Telephone with two dry batteries. Shipping weight, 41 pounds. Price, each. \$ 8.40	
6 telephones and twelve batteries..... 49.35	
No. 57H5532 Southwestern Telephone with two dry batteries. Shipping wt., 52 lbs. Price, each. \$ 8.70	
6 telephones and twelve batteries..... 51.75	
With two wet batteries. Shipping weight, 66 pounds. Price, each..... \$ 8.95	
6 telephones and twelve batteries..... 52.40	

Extension Bells.

May be connected to any telephone and placed at some distant point in same or other buildings where telephone bell might not be heard. May also be used for code signaling by means of a magneto. Extension bell should be of same ohms resistance as telephone to which it is connected. Order enough wire No. 57H7920, page 29, to make connections. Shipping weight, for any size, 5 pounds.

No. 57H5670 80-Ohm Extension Bell. Price. \$1.60

No. 57H5671 1,000-Ohm Extension Bell. Price. 2.40

No. 57H5672 1,600-Ohm Extension Bell. Price. 2.80

No. 57H5673 2,000-Ohm Extension Bell. Price. 3.00

No. 57H5674 2,500-Ohm Extension Bell. Price. 3.15



No. 57H5515 Five-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$11.15

6 telephones and twelve dry batteries..... 64.90

Price, with two wet batteries, each..... \$11.45

6 telephones and twelve wet batteries..... 66.30

No. 57H5516 Five-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$11.45

6 telephones and twelve dry batteries..... 66.65

Price, with two wet batteries, each..... 11.70

No. 57H5517 Five-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each..... 68.15

6 telephones and twelve wet batteries, each..... 11.70

No. 57H5518 Five-Magnet Bridging Telephone, Southwestern style, with 2,500-ohm ringer. Price, with two dry batteries, each..... 70.25

6 telephones and twelve wet batteries..... 70.25

No. 57H5519 Five-Magnet Bridging Telephone, Southwestern style, with 3,000-ohm ringer. Price, with two dry batteries, each..... 72.25

6 telephones and twelve wet batteries..... 71.30

Price, with two wet batteries, each..... 12.50

6 telephones and twelve wet batteries..... 72.90

Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.

No. 57H5521 Four-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$10.15

6 telephones and twelve dry batteries..... 59.50

Price, with two wet batteries, each..... 10.35

6 telephones and twelve wet batteries..... 60.70

No. 57H5522 Four-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$10.45

6 telephones and twelve dry batteries..... 61.30

Price, with two wet batteries, each..... 10.70

6 telephones and twelve wet batteries..... 62.80

No. 57H5523 Four-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$10.80

6 telephones and twelve dry batteries..... 63.40

Price, with two wet batteries, each..... 11.05

6 telephones and twelve wet batteries..... 64.90

Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.

Bridging Telephones With Compact Cabinets.	
No. 57H5500 Five-Magnet Compact Bridging Telephone, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$10.70	
6 telephones and twelve batteries..... 61.95	
No. 57H5501 Five-Magnet Compact Bridging Telephone, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$11.00	
6 telephones and twelve batteries..... 63.95	
No. 57H5502 Five-Magnet Compact Bridging Telephone, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$11.40	
6 telephones and twelve batteries..... 65.90	
No. 57H5503 Five-Magnet Compact Bridging Telephone, with 2,500-ohm ringer. Price, with two dry batteries, each..... \$11.80	
6 telephones and twelve batteries..... 67.75	
No. 57H5506 Four-Magnet Compact Bridging Telephone, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$10.00	
6 telephones and twelve batteries..... 57.90	
No. 57H5507 Four-Magnet Compact Bridging Telephone, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$10.30	
6 telephones and twelve batteries..... 59.50	
No. 57H5508 Four-Magnet Compact Bridging Telephone, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$10.70	
6 telephones and twelve batteries..... 61.95	
Shipping weight, Compact Telephone, 43 pounds.	

Bridging Telephones With Southwestern Cabinets.	
No. 57H5515 Five-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$11.15	
6 telephones and twelve dry batteries..... 64.90	
Price, with two wet batteries, each..... \$11.45	
6 telephones and twelve wet batteries..... 66.30	
No. 57H5516 Five-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$11.45	
6 telephones and twelve dry batteries..... 66.65	
Price, with two wet batteries, each..... 11.70	
No. 57H5517 Five-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each..... 68.15	
6 telephones and twelve wet batteries, each..... 11.70	
No. 57H5518 Five-Magnet Bridging Telephone, Southwestern style, with 2,500-ohm ringer. Price, with two dry batteries, each..... 70.25	
6 telephones and twelve wet batteries..... 70.25	
No. 57H5519 Five-Magnet Bridging Telephone, Southwestern style, with 3,000-ohm ringer. Price, with two dry batteries, each..... 72.25	
6 telephones and twelve wet batteries..... 71.30	
Price, with two wet batteries, each..... 12.50	
6 telephones and twelve wet batteries..... 72.90	
Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.	
No. 57H5521 Four-Magnet Bridging Telephone, Southwestern style, with 1,000-ohm ringer. Price, with two dry batteries, each..... \$10.15	
6 telephones and twelve dry batteries..... 59.50	
Price, with two wet batteries, each..... 10.35	
6 telephones and twelve wet batteries..... 60.70	
No. 57H5522 Four-Magnet Bridging Telephone, Southwestern style, with 1,600-ohm ringer. Price, with two dry batteries, each..... \$10.45	
6 telephones and twelve dry batteries..... 61.30	
Price, with two wet batteries, each..... 10.70	
6 telephones and twelve wet batteries..... 62.80	
No. 57H5523 Four-Magnet Bridging Telephone, Southwestern style, with 2,000-ohm ringer. Price, with two dry batteries, each..... \$10.80	
6 telephones and twelve dry batteries..... 63.40	
Price, with two wet batteries, each..... 11.05	
6 telephones and twelve wet batteries..... 64.90	
Shipping weight, above telephones, with dry batteries, 54 pounds; with wet batteries, 68 pounds.	

A WORD ABOUT SWITCHBOARDS

If you are thinking of forming a telephone company it will pay you to consider the location and style of a switchboard even though the number of subscribers or owners of telephones is not large enough to warrant the installation of a board at present.

Is Your Line Always Busy?

If you have a line and the number of telephones on your line is so great that the service is becoming poor, it is time you considered buying a switchboard. The service will be so much improved that you will be well repaid for the small expenditure. Every year we supply a great many switchboards to groups of telephone users forming mutual telephone companies and to rural telephone companies already established.

Where to Put the Switchboard.

First of all determine where you would like to have the switchboard. Place it as near as possible to the center of all of the homes having telephones; that is, where the branch lines will be the shortest. Also take into account the probable growth of business and the new lines that will be built.

Cordless Relief Switch.

For Many-Party Lines.

This cordless relief switch is designed for toll extension lines and to relieve a heavily loaded line by dividing it into two lines. It thus serves as a two-line switchboard. By dividing the line fewer signals are needed and better service results. Neighbors on one half of divided line can talk while those on other half are also talking. The operator can connect his phone to either half by simply shifting the key lever (see top of relief switch). While his phone is connected to one half the bells of the relief switch are connected to the other half, so that any of the parties can call him at any time. He can connect both halves of the line by simply placing the key lever in a vertical position. He will also be connected. They are easily installed. Directions are furnished. Shipping weight, any style, about 4 pounds.

No. 57H5730	With 1,000-Ohm Ringer.	Price.....	\$4.25
No. 57H5731	With 1,600-Ohm Ringer.	Price.....	4.55
No. 57H5732	With 2,000-Ohm Ringer.	Price.....	4.85
No. 57H5733	With 2,500-Ohm Ringer.	Price.....	5.00

Receivers and Receiver Shells.

No. 57H5605	Bi-Polar as furnished with our magneto telephones.	Shipping weight, 1 pound 5 ounces.	Price, each.....	\$1.05
No. 57H5606	Receiver Shell.	Shipping wt., 1½ lbs.	Price, each.....	1.00

Price, each..... 35¢

Receiver Cord.

No. 57H5685	36-inch. Note two types of terminals. Shipping wt., either style, 2 ounces.	Price, per pair.....	20¢
No. 57H5686	Cord with two straight and two spade terminals.	Price, per pair.....	20¢

Price, per pair..... 20¢

Generators.

These generators are the same as furnished with all our magne- to phones. Magnets are made of high grade magnet steel and the armatures are of laminated Norway iron wound with silk insulated magnet wire.	No. 57H5610	3-Magnet Series General- tor. Shipping weight, about 8½ pounds. Price.....	2.65
No. 57H5612	4-Magnet Series Generator. Shipping wt., about 10½ pounds. Price.....	3.30	
No. 57H5614	4-Magnet Bridging Generator. Ship- ping weight, about 10½ pounds. Price.....	3.90	
No. 57H5616	5-Magnet Bridging Generator. Ship- ping weight, about 13 pounds. Price.....	4.35	

Telephone Bells.

No. 57H5635	Nickel plated, adjust- able mounting brackets, as furnished with our magneto telephones.	Shipping weight, 7 oz.	Price, per pair.....	35¢
No. 57H5640	Long lever type, used on our Compact and Southwestern style telephones. Shpg. wt., 11 oz.	Price, each.....	50¢	

Switch Hooks.

No. 57H5640	Long lever type, used on our Compact and Southwestern style telephones. Shpg. wt., 11 oz.	Price, each.....	50¢
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How to Select a Switchboard.

Of course you want the best you can obtain for the money. On the pages which follow we show three different types of switchboards at prices which will save you money, and we have tried to explain in a short space how to select a switchboard and to figure its cost.

We Will Advise You Without Obligation.

If you do not know just what board to select, write us, answering the following questions:

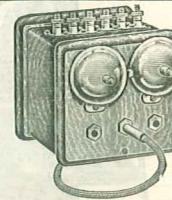
- 1—How many lines will there be at the start?
- 2—How many lines are one-wire or grounded lines?
- 3—What is the resistance in ohms of the telephones on each line?
- 4—Do you expect to run new lines soon? How many?

Our engineers will be glad to tell you of the best equipment for your use, and will tell you the cost. They will also answer any other questions which you may wish to ask about your equipment.

Relief Switch.

This switch is used for the same purpose as the one to the left but is not quite as compact or convenient. It consists of an extension bell ringer, three jacks and a cord and plug. Connections are made by shifting the plug. Shipping weight, about 5 pounds.

No. 57H5714	With 1,000-Ohm Ringer. Price.....	\$4.35
No. 57H5715	With 1,600-Ohm Ringer. Price.....	4.65
No. 57H5716	With 2,000-Ohm Ringer. Price.....	4.95
No. 57H5717	With 2,500-Ohm Ringer. Price.....	5.25



Extension Bell Unit.

This unit, which may also be called a single line ringer board, consists of an indicating bell with two jacks connected in multiple. It is used where the capacity of an indicating bell switchboard, like our No. 1 or No. 2 Boards, has been exhausted and an additional line desires to come in. One of these extension bell units can be installed for each new line that comes in after the switchboard is full, and as many may be put in as space will permit. They are mounted on the wall alongside the board and connection made with the plug the same as though the unit was a part of the switchboard.

The extension bell units may also be used in cases where a branch line desires to come in and connect with the main line. Prices for Extension Bell Units are as follows:

No. 57H5718	With 1,000-Ohm Ringer. Price, each.....	\$4.20
No. 57H5719	With 1,600-Ohm Ringer. Price, each.....	4.54
No. 57H5720	With 2,000-Ohm Ringer. Price, each.....	5.46
No. 57H5721	With 2,500-Ohm Ringer. Price, each.....	5.85

These prices do not include cord and plug. Shipping wt., any style, about 1 lb.

Extension bell units should be ordered with ringers of the same ohms resistance as the telephones on the lines with which they are to be connected.

No. 57H5763	High grade self cleaning, equipped with clips, which can be attached to the line without cutting the wire. Consists of a grounded carbon rod, incased in a brass shell and insulated from it. The entire surface of the rod is exposed to the inner surface of the shell. Length over all, about 7 inches. Shipping weight, 8 ounces. Price, each.....	60¢
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Outdoor Arrester.

No. 57H5760	Adjustable Arm with transmitter and induction coil. Same as furnished with our Southwestern style telephones. Shipping weight, 4 pounds.	2.25
No. 57H5681	Adjustable Arm with transmitter, without induction coil. Same as furnished with our Compact style telephones. Shipping wt., 3½ lbs. Price, each.....	1.85

No. 57H5690	Solid Back Transmitter. Button type granular carbon transmitter, same as furnished with our Compact and Southwestern style telephones. Shipping wt., 1½ lbs. Price, each.....	1.45
No. 57H5691	Composition Mouthpiece for use with any of our telephone transmitters. Shpg. wt., 5 ounces. Price, each.....	1.50

Mouthpieces.

No. 57H5600	Solid Back Transmitter. Button type granular carbon transmitter, same as furnished with our Compact and Southwestern style telephones. Shipping wt., 1½ lbs. Price, each.....	1.45
No. 57H5619	80 Ohms	

Lines. Porcelain base, about 7½ x 4 x 5½ inches. Shipping weight, 5 oz. Price, each, with one copper tip fuse. 23¢

No. 57H5751	Double pole porcelain fuse block, Western Union style, but arranged for two fuses and lightning arresters for use on metallic or two-wire lines. Base, about 1¼ x 4¾ x 5½ inches. Shipping weight, 10 ounces.	30¢
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Price, each, with two copper tip fuses. 23¢

No. 57H5754	Single pole porcelain fuse block, Postal style, with mica insulated carbon lightning arrester. Postal fuses are held by screws. All metal parts are brass. Shipping weight, 5 ounces.	2.00
No. 57H5755	Single pole porcelain fuse block, Postal style, with mica insulated carbon lightning arrester. Postal fuses are held by screws. All metal parts are brass. Shipping weight, 5 ounces.	2.00

Price, each, with one copper tip fuse. 23¢

No. 57H5756	Double pole porcelain fuse block, Postal style, with mica insulated carbon lightning arrester. Shipping weight, 10 ounces.	30¢
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Price, each, with two copper tip fuses. 30¢

Fuse Blocks.

No. 57H5757	Single pole porcelain fuse block, Western Union style, with mica insulated carbon lightning arrester and switch cut-out, for ground lines. Shipping weight, 12 oz.	4.80
No. 57H5758	Double pole porcelain fuse block, Western Union style, with mica insulated carbon lightning arrester. Shipping weight, 15 oz.	8.50

Price, each, with one copper tip fuse. 4.80

No. 57H5759	Double pole porcelain fuse block, Western Union style, with mica insulated carbon lightning arrester for metallic lines. Porcelain base, about 2½ x 7½ inches by about 5 in. thick. Shipping wt., 1 lb. 15 oz.	12.00
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Price, each, with two copper tip fuses. 12.00

Protector and Cut-Out.

No. 57H5755	Standard toll and rural line carbon block lightning arrester. Consists of three carbon blocks, separated at the edges by insulating cloth, allowing a very large discharge surface. The carbons are held by brass mountings on porcelain base, 2x3½ inches by about ½ inch thick. Efficient indoor arrester, suitable for one or two-wire lines. Shipping weight, 1½ pounds. Price, each.....	30¢
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Price, each, with one copper tip fuse. 30¢

No. 57H5760	Western Union, copper tip. \$1.00	12¢
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Price, each, with one copper tip fuse. 12¢

No. 57H5761	Postal, copper tip. 1.10	15¢
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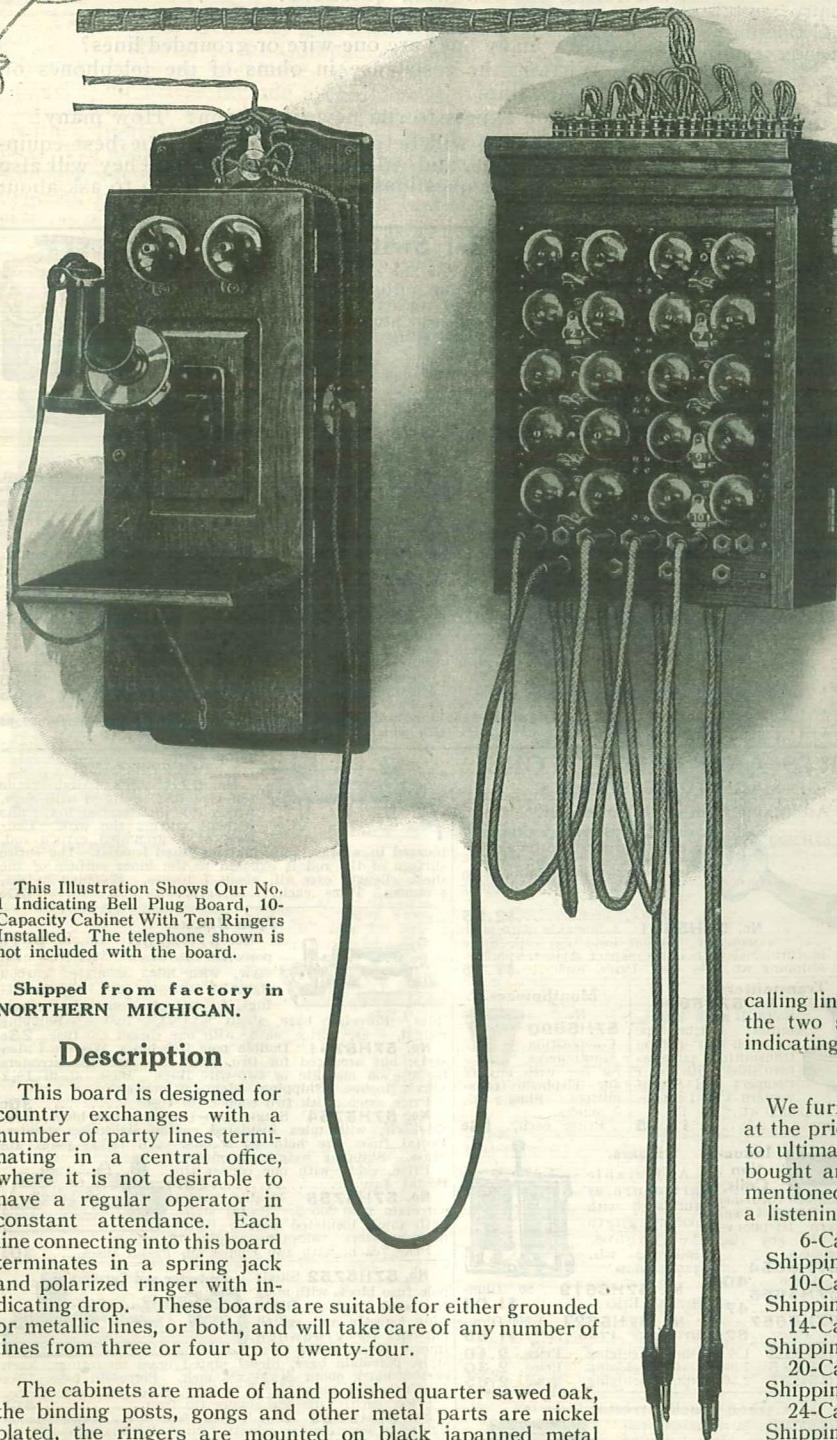
Price, each, with one copper tip fuse. 15¢

No. 57H5762	Veribest Glass Inclosed Fuses, for Western Union fuse blocks. Shipping wt., per dozen, 2 oz.	15¢
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Price, per 100, \$1.50; per dozen..... 15¢

No. 1 Indicating Bell Plug Board

No. 57H5704



This Illustration Shows Our No. 1 Indicating Bell Plug Board, 10-Capacity Cabinet With Ten Ringers Installed. The telephone shown is not included with the board.

Shipped from factory in
NORTHERN MICHIGAN.

Description

This board is designed for country exchanges with a number of party lines terminating in a central office, where it is not desirable to have a regular operator in constant attendance. Each line connecting into this board terminates in a spring jack and polarized ringer with indicating drop. These boards are suitable for either grounded or metallic lines, or both, and will take care of any number of lines from three or four up to twenty-four.

The cabinets are made of hand polished quarter sawed oak, the binding posts, gongs and other metal parts are nickel plated, the ringers are mounted on black japanned metal panels, and every detail of construction is guaranteed both mechanically and electrically.

It is as easy to install one of these boards as it is to put in a telephone, as there is no wiring whatever to be done on the board. They come fully wired and need not even be opened. The lines

terminating in the board are simply connected to the binding posts on top of the cabinet and it is ready for use. Simple and easily understood instructions, together with blue print showing the wiring system, are sent with each board.

This board must be used in conjunction with a telephone, and, for convenience, it is usually put up on the wall right next to the telephone, as shown in our illustration. Connection from the board to the telephone is made by means of the operator's plug and switchboard cord which is included with each board.

The operation of this board is extremely simple. A certain signal is agreed upon for Central (one long ring, for example), and the party taking care of the board knows from this signal when Central is wanted, and the indicating drop shows which line is calling. As the bells can be heard for some distance, the operator need only go to the board when Central is called.

Supposing a subscriber on one of the lines terminating in this board wishes to talk with a subscriber on another line. He signals Central, and the operator, hearing the signal, goes to the board, notes by the indicating drop which line is calling, plugs into the indicated jack, and asks over the telephone what line is wanted. Upon getting this information from the calling subscriber, the operator plugs into the jack of the wanted line, and, with the receiver on the hook, gives the crank of the operator's telephone the proper turns to signal the wanted subscriber. When this subscriber answers, the operator's plug is withdrawn and the plug of the calling line is placed in the jack of the called line, thus connecting the two subscribers. When these subscribers ring off, the indicating drop falls, and the operator takes down the plugs.

Cabinets

We furnish the cabinets in 6, 10, 14, 20 and 24-line capacity at the prices quoted below. They are fully wired and jacked to ultimate capacity so that indicating bell ringers can be bought and installed as lines are added. Each cord circuit mentioned in the list below includes two cords and plugs and a listening-in jack.

6-Capacity Cabinet, with three cord circuits. Shipping weight, equipped, about 38 lbs. Price... \$11.75
10-Capacity Cabinet, with four cord circuits. Shipping weight, equipped, about 40 lbs. Price... 15.24
14-Capacity Cabinet, with five cord circuits. Shipping weight, equipped, about 46 lbs. Price... 20.00
20-Capacity Cabinet, with five cord circuits. Shipping weight, equipped, about 55 lbs. Price... 24.55
24-Capacity Cabinet, with six cord circuits. Shipping weight, equipped, about 60 lbs. Price... 28.26

These prices include operator's plug with 6-foot cord for connecting with operator's telephone, but do not include ringers, repeating coils nor lightning arresters, which we install on the board in accordance with the purchaser's requirements, as explained on the following page.

No telephone is included with these boards.

Indicating Bell Ringers

An indicating bell ringer consists of a polarized ringer and two $1\frac{3}{4}$ -inch nickel plated gongs with indicating drop, mounted on black japanned metal panel. When a subscriber signals Central, the clapper, vibrating between the gongs, rings them, and at the same time releases the drop, which falls and indicates the calling line. Our ringers are made with the drops hinged below the clapper so they do not retard its action, and therefore never stick. They have no keys to get out of order, and you will have little or no trouble with them as the construction is very simple, yet very substantial, and the action sure and positive.

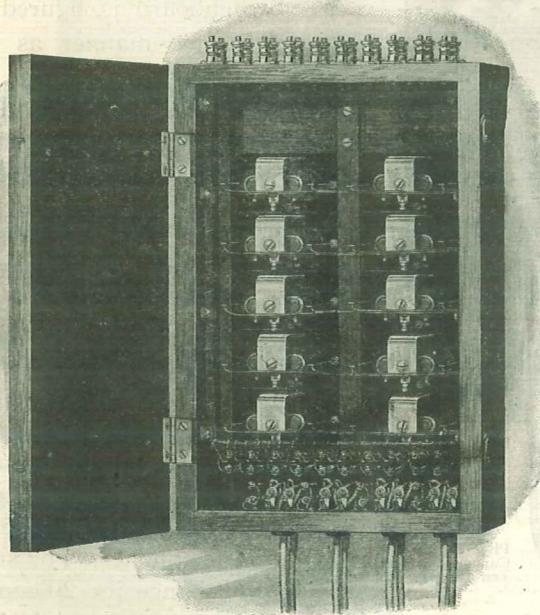
Ringers will be installed on the board at the following prices:

No. 57H5710 $\frac{1}{3}$	1,000-Ohm Ringers, complete. Price, each.	\$1.35
No. 57H5711 $\frac{1}{3}$	1,600-Ohm Ringers, complete. Price, each.	1.60
No. 57H5712 $\frac{1}{3}$	2,000-Ohm Ringers, complete. Price, each.	1.90
No. 57H5713 $\frac{1}{3}$	2,500-Ohm Ringers, complete. Price, each.	2.15

Weight of additional ringers shipped singly, about 3 pounds.

Each ringer installed on the board must be of the same ohms resistance as the telephones on the line connected. For example, a line with 1,600-ohm telephones must have a 1,600-ohm ringer on the board, or a line with 2,500-ohm telephones must terminate in a 2,500-ohm ringer on the board.

Indicating Bell Ringer.



No. 1 Indicating Bell Plug Board With Rear Door Open to Show Interior.

Combination Carbon and Fuse Lightning Arresters, mounted on panel.	Price, each.....	\$0.15
Extra Fuses, Western Union Style, Copper Tips.	Price, per 100.....	1.10
Price, per dozen.....		.15

Example of Cost Complete

To figure the entire cost of a board, simply add the cost of the necessary number of ringers, repeating coils and lightning arresters to the cost of the cabinet.

Take, for example, an exchange with ten country lines, six of which are equipped with 1,600-ohm ringers and four with 2,500-ohm ringers, two of these lines metallic and eight grounded. For such an exchange we recommend our No. 57H5704 14-capacity cabinet, thus providing for the addition of four more lines as the exchange grows, and at the start it must be equipped with six 1,600-ohm ringers, four 2,500-ohm ringers, one repeating coil and twelve lightning arresters (two for each metallic line and one for each grounded line), making the total cost \$42.70, which is figured as follows:

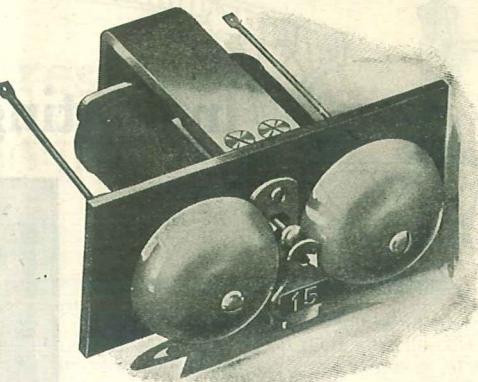
One 14-Capacity Cabinet with five circuits.	Price.....	\$20.00
Six 1,600-Ohm Indicating Ringers, at \$1.60 each.....		9.60
Four 2,500-Ohm Indicating Ringers, at \$2.15 each.....		8.60
One Repeating Coil.....		2.70
Twelve Combination Carbon and Fuse Lightning Arresters, at 15 cents each.....		1.80

Total Cost..... \$42.70

We advise purchasers to order boards of greater capacity than will be needed at the start, because it is our experience that when an exchange is once established, it is usually but a short time until it is desired to connect additional lines, and by getting a board of greater capacity than required at the start, future growth is provided for.

When ordering the board it is not necessary to have it equipped with more ringers than will be required at the start, as each board is sent out fully wired to its ultimate capacity, and extra ringers can be added to the board at any time. It is very easy to put in additional ringers when needed, as it is only necessary to remove the temporary oak panels which occupy the blank spaces on the board, set the ringers in position and make two connections at the back of the board. No wiring whatever is necessary.

If you have any trouble whatever figuring the cost of a board, answer all of the questions on page 23, and we will figure for you without any obligation on your part—you do not have to buy.



Repeating Coils

If part of the lines coming in on the board are metallic (two-wire) systems, and part are grounded (one-wire) systems, so that it is often necessary to establish connections between metallic and grounded lines, a repeating coil should be wired into one or more of the cord circuits. If half of the lines are metallic and half grounded, then half the cord circuits should have repeating coils. For example, if there are ten lines, thus requiring four cord circuits, five of these lines metallic and five grounded, two of the cord circuits should have repeating coils. If two of the ten lines are metallic and eight grounded, or vice versa, eight metallic and two grounded, then it will be sufficient to equip one cord circuit with repeating coil. The idea is simply to provide a sufficient number, so that, as a rule, a cord circuit with repeating coil will be available when needed. Shipping weight, about 5 pounds.

Repeating Coils, installed on board. Price, each.... **\$2.70**

Lightning Arresters

Every switchboard should be equipped with our Combination Carbon and Fuse Lightning Arresters, as they afford better protection against damage by lightning. One single arrester should be put in for each grounded line terminating in the board, and one pair for each metallic line terminating in the board. Shipping weight, per bank of three, about 1 pound.

\$0.15

1.10

.15

Combination Carbon and Fuse Lightning Arresters, mounted on panel.	Price, each.....	\$0.15
Extra Fuses, Western Union Style, Copper Tips.	Price, per 100.....	1.10
Price, per dozen.....		.15

Total Cost..... \$42.70

We advise purchasers to order boards of greater capacity than will be needed at the start, because it is our experience that when an exchange is once established, it is usually but a short time until it is desired to connect additional lines, and by getting a board of greater capacity than required at the start, future growth is provided for.

When ordering the board it is not necessary to have it equipped with more ringers than will be required at the start, as each board is sent out fully wired to its ultimate capacity, and extra ringers can be added to the board at any time. It is very easy to put in additional ringers when needed, as it is only necessary to remove the temporary oak panels which occupy the blank spaces on the board, set the ringers in position and make two connections at the back of the board. No wiring whatever is necessary.

If you have any trouble whatever figuring the cost of a board, answer all of the questions on page 23, and we will figure for you without any obligation on your part—you do not have to buy.

No. 2 Indicating Bell Plug Switchboard

No. 57H5706

This board is designed for the same purpose as our No. 1 Indicating Bell Plug Board, and is of exactly the same construction, except that it is equipped with operator's complete telephone, consisting of powerful five-bar generator, receiver and cord; switch hook, transmitter, transmitter arm, induction coil and condenser. Instead of using a separate telephone, as with our No. 1 Board, the operator's telephone is complete in the switchboard. In order to accommodate the operator's telephone, the cabinets are necessarily larger than those for the No. 1 Plug Board.

Cabinets

We furnish the cabinets in four sizes, and at the prices quoted below they are fully wired and jacked to ultimate capacity, with the necessary number of cord circuits installed, and operator's complete telephone.

10-Capacity Cabinet, with four cord circuits. Shipping weight, equipped, about 60 lbs. Price.. **\$23.10**

14-Capacity Cabinets, with five cord circuits. Shipping weight, equipped, about 66 lbs. Price.. **27.95**

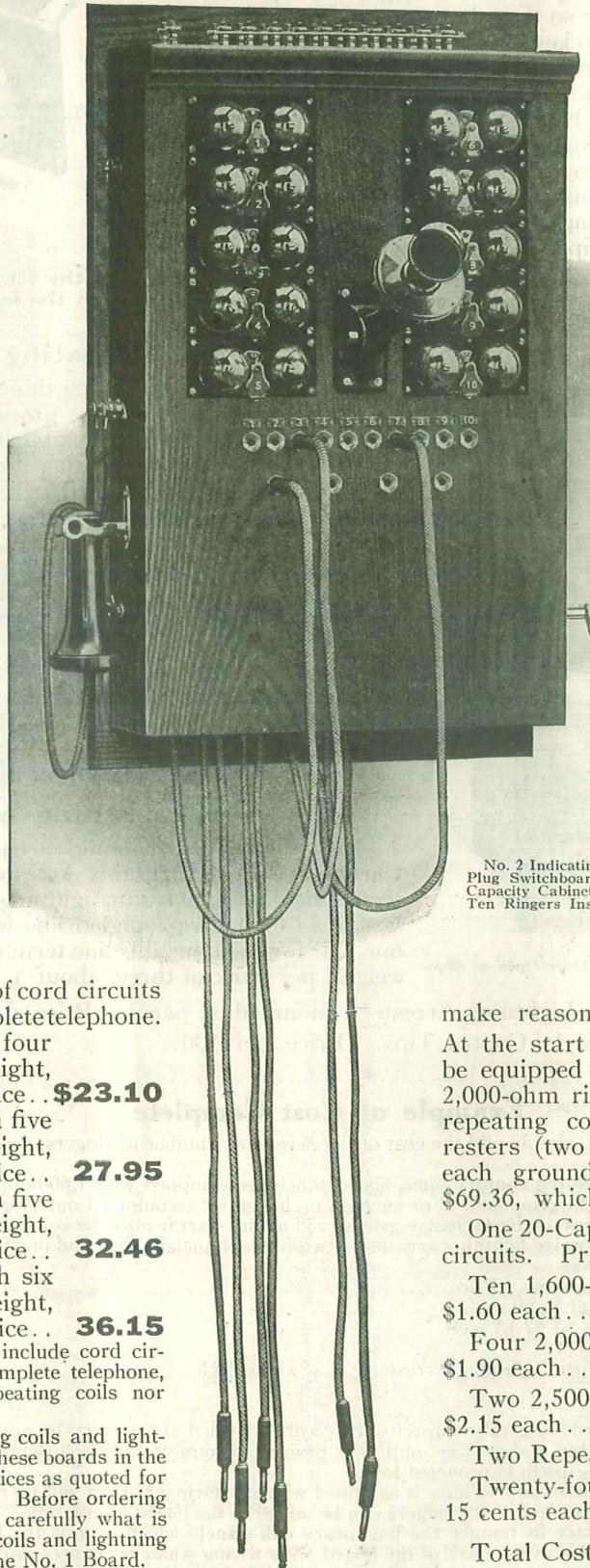
20-Capacity Cabinets, with five cord circuits. Shipping weight, equipped, about 75 lbs. Price.. **32.46**

24-Capacity Cabinets, with six cord circuits. Shipping weight, equipped, about 80 lbs. Price.. **36.15**

The above prices for cabinets include cord circuits as stated and operator's complete telephone, but do not include ringers, repeating coils nor lightning arresters.

Indicating bell ringers, repeating coils and lightning arresters will be installed on these boards in the same manner and at the same prices as quoted for No. 1 Indicating Bell Plug Board. Before ordering one of these No. 2 Boards, read carefully what is said regarding ringers, repeating coils and lightning arresters in the description of the No. 1 Board.

If you have any trouble whatever in figuring the cost of your switchboard, write us, answering the questions on page 23, and we will be glad to tell you just what you need and the cost.



No. 2 Indicating Bell Plug Switchboard, 10-Capacity Cabinet, with Ten Ringers Installed.

Example of Cost Complete

The entire cost of our No. 2 Indicating Bell Plug Switchboard is figured in the same manner as explained for the No. 1 Board, namely, by adding the cost of the desired number of ringers, repeating coils and lightning arresters to the cost of the cabinet, as quoted below. For example, take an exchange with sixteen country lines, eight of which are metallic system and eight grounded, ten equipped with 1,600-ohm telephones, four with 2,000-ohm telephones and two with 2,500-ohm telephones. For such an exchange the 20-capacity cabinet will meet all immediate requirements and

make reasonable provision for future growth. At the start the board for this exchange must be equipped with ten 1,600-ohm ringers, four 2,000-ohm ringers, two 2,500-ohm ringers, two repeating coils and twenty-four lightning arresters (two for each metallic line and one for each grounded line), making the total cost \$69.36, which is figured as follows:

One 20-Capacity Cabinet, with five cord circuits. Price.....	\$32.46
Ten 1,600-Ohm Indicating Ringers, at \$1.60 each.....	16.00
Four 2,000-Ohm Indicating Ringers, at \$1.90 each.....	7.60
Two 2,500-Ohm Indicating Ringers, at \$2.15 each.....	4.30
Two Repeating Coils, at \$2.70 each....	5.40
Twenty-four Lightning Arresters, at 15 cents each.....	3.60
Total Cost.....	\$69.36

Floor Cabinet Express Switchboard

No. 57H5708

This board is designed for either town or country exchanges where the number of lines is sufficient to justify the employment of an operator in constant attendance. It is a very convenient board for small town exchanges having a number of country party lines coming in on their switchboard. Each series or bridging line connecting into this board terminates in a spring jack and self restoring indicating drop.

The simplicity of construction and ease of access makes this board particularly desirable for exchanges where expert assistance is not always available. In the entire board there is not a screw nor a part that is not absolutely essential, and yet it contains everything necessary for good service.

It is just as easy to connect up the lines to one of these switchboards as it is to put in an ordinary telephone. The boards come completely wired, and easily understood instructions, together with blue prints, showing exactly how every incoming line is to be connected, are sent with the board. No experience in such work is necessary, as the simple instructions and blue prints make the installation very easy.

Cabinets

The cabinets are made from selected quarter sawed oak, with steel drop frame. The woodwork is finely finished and hand polished, presenting a very handsome appearance. They are made in various sizes, ranging from 25 to 300-line capacity, and can be arranged for any number of drops and key circuits.

The following prices are for the cabinets fully wired to ultimate capacity, with operators' sets as specified, and cable extending 10 feet from base of board:

25-Capacity Cabinet, with one operator's set. Shpg. wt., 275 lbs. Price.....	\$35.37
50-Capacity Cabinet, with one operator's set. Shpg. wt., 300 lbs. Price.....	39.60
100-Capacity Cabinet, with one operator's set. Shpg. wt., 325 lbs. Price.....	40.65
150-Capacity Cabinet, with one operator's set. Shpg. wt., 450 lbs. Price.....	48.00
200-Capacity Cabinet, with two operators' sets. Shpg. wt., 600 lbs. Price.....	70.00
250-Capacity Cabinet, with two operators' sets. Shpg. wt., 725 lbs. Price.....	77.00
300-Capacity Cabinet, with three operators' sets. Shpg. wt., 900 lbs. Price....	99.75

Key circuits, drops, repeating coils and lightning arresters are not included at these prices, but will be installed, as explained on this and the following page.

Operators' Sets

An operator's set consists of transmitter, transmitter hanger, transmitter cord, watch case receiver, receiver cord, head band, receiver plug, receiver jack, induction coil, two cord racks, key cable, two cord weights, powerful five-magnet generator, generator rest, generator buzzer, night bell and night bell relay.

It is customary to equip boards of 150 capacity or less with one operator's set, those of 200 or 250 capacity with two operators' sets, and on larger boards one operator's set is usually installed for each 100 lines. The prices quoted above for the cabinets include the operator's sets.

Key Circuits

A key circuit consists of two cords, two plugs, one clearing out drop, one operator's combined ringing and listening-in key, with ring-back and two cord weights. The clearing out drop is mounted below the line drops and jacks, and is to signal the operator when a conversation is finished. The listening-in key enables the operator to "supervise" the conversation, that is, listen in to ascertain if proper service is secured. The ring-back key enables the operator to ring the calling subscriber without changing the plugs.

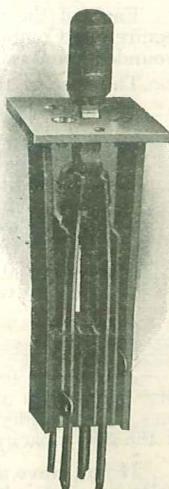
Our operator's keys are made with very few parts, the frames are stamped from one piece of heavy brass, and the extra strong and rigid springs are of high grade German silver, insulated with hard rubber strips.

One key circuit should be installed on the board for each ten lines entering the switchboard.

Key Circuits, installed on board. Price, each.....**\$4.50**

The Most Important Parts of a Switchboard Are the Drops and Keys.

Note carefully the illustrations and descriptions of these parts as furnished with our boards.

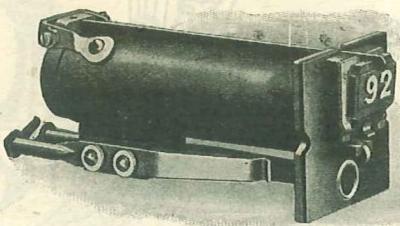


Operator's Key.

This Plug Is Used With All of Our Switchboards.



Self Restoring Drops



Self Restoring Drop.

We direct special attention to the superiority of our self restoring drops, which are of the tubular type, very strong and rigid and made with the fewest possible parts. When a subscriber signals Central, the numbered shutter on the front of the drop falls,

thus indicating which line is calling, and when the operator plugs in the shutter is automatically returned to its normal position, hence the name "self restoring." Each drop is a complete unit in itself and can be installed or removed at any time without interfering with the operation of any of the other drops on the board. There are many boards on the market in which the drops are installed in banks, making the installation of additional drops very difficult for anyone except an expert. Our drops are mounted on a steel frame instead of on the wood direct, which avoids another frequent source of trouble in many of our competitors' boards.

One drop must be put in for each series or bridging line coming into the board. The drops must correspond to the lines connected; that is, series drops must be installed for the series lines, and bridging drops for the country lines, and the bridging drops must be of the same ohms resistance as the phones on the connected lines.

We install Self Restoring Drops on the board at the following prices:

No. 57H5722 $\frac{1}{3}$	80-Ohm Series Drops.	Price, each.....	\$1.32
No. 57H5723 $\frac{1}{3}$	1,000-Ohm Bridging Drops.	Price, each.....	1.65
No. 57H5724 $\frac{1}{3}$	1,600-Ohm Bridging Drops.	Price, each.....	1.75
No. 57H5725 $\frac{1}{3}$	2,000-Ohm Bridging Drops.	Price, each.....	1.90
No. 57H5726 $\frac{1}{3}$	2,500-Ohm Bridging Drops.	Price, each.....	2.15

Shipping weights, any of the above, about 5 pounds.

Additional drops may be purchased at the above prices at any time as the exchange grows and are easily installed.

Example of Cost Complete

The entire cost of our Floor Cabinet Express Switchboard, complete ready for use, is figured by adding the cost of the desired number of drops, key circuits, repeating coils and lightning arresters to the cost of the cabinet.

Take, for example, an exchange in a small town having eighty subscribers in the town and thirty country lines coming in, twenty of the country lines grounded and ten metallic, one-half of them equipped with 1,600-ohm ringers and the other half with 2,000-ohm ringers.

For this exchange a 150-capacity board will be required with 110 drops installed.

A twenty-five capacity board with all drops installed requires three key circuits; a fifty-capacity board, five key circuits; a one hundred capacity board, ten key circuits, etc.

As twenty of the lines are grounded and ninety metallic, two of the twelve key circuits should have repeating coils wired in.

Each of the eighty series lines and each of the ten metallic country lines will require two Combination Carbon and Fuse Lightning Arresters and each of the twenty grounded country lines will require one arrester, making a total of 200 arresters.

The cost of the board complete is then figured as follows:

One 150-Capacity Cabinet with one operator's set.	
Price.....	\$ 48.00
Eighty 80-Ohm Series Drops, at \$1.32 each.....	105.60
Fifteen 1,600-Ohm Bridging Drops, at \$1.75 each.	26.25
Fifteen 2,000-Ohm Bridging Drops, at \$1.90 each.	28.50
Twelve Key Circuits, at \$4.50 each.....	54.00
Two Repeating Coils, at \$2.70 each.....	5.40
200 Combination Lightning Arresters, at 15 cents each.....	30.00
Total Cost.....	\$297.75

This board for the exchange suggested above would provide for the addition of forty more lines as the exchange grows. If it seems probable that more than forty lines will be added later, it would be wise to put in the 200-capacity cabinet instead of the 150-capacity suggested in the above estimate.

If you have any trouble whatever in figuring the cost of your switchboard, write us, answering the questions on page 23, and we will be glad to tell you just what you need and the cost.

Repeating Coils

If part of the lines coming into the switchboard are metallic (two-wire) and part are grounded (one-wire) systems, so that it is often necessary to establish connection between grounded and metallic lines, a repeating coil should be wired into one or more of the key circuits. If half of the lines are metallic and half grounded, then half of the cord circuits should be equipped with repeating coils. If one-third of the lines are grounded and two-thirds metallic, or vice versa, one-third metallic and two-thirds grounded, then one-third of the key circuits should have repeating coils. Example, if there are fifteen grounded lines and thirty metallic lines coming into the board, which would require nine key circuits, three of them should have repeating coils.

Repeating Coils, installed on board. Price, each..... **\$2.70**

Lightning Arresters

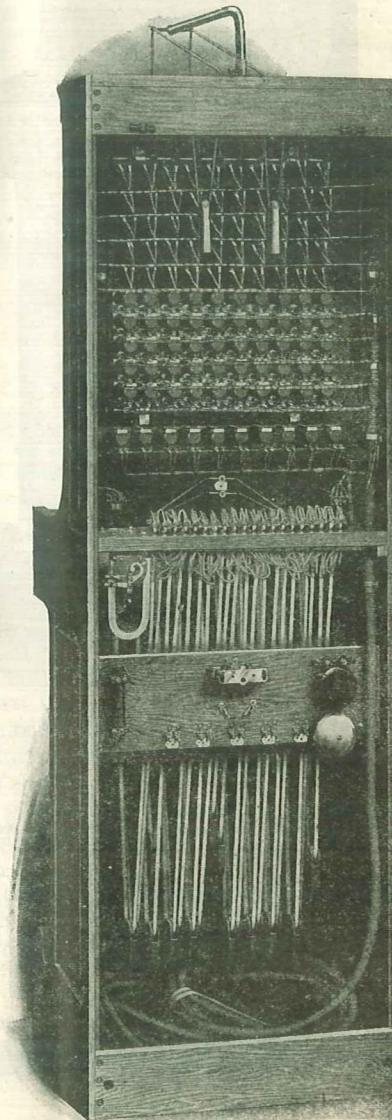
Every switchboard should be equipped with our Combination Carbon and Fuse Lightning Arresters. One single arrester should be put in for each grounded line terminating in the board, and a pair for each metallic line terminating in the board.

We furnish these Combination Carbon and Fuse Lightning Arresters mounted on a board, as shown in the illustration on page 25 thus forming a distributing frame for the switchboard.

Combination Carbon and Fuse Lightning Arresters, mounted on panel. Price, each..... **15c**

Extra Fuses, Western Union Style, copper tips.
Price, per 100..... **\$1.10**

Price,
per dozen. **15c**



Express Switchboard, With Back Panel Removed
to Show Interior Construction.

Line Materials—Tools—Wire

Single and Double Groove Pony Glass Insulators.
No. 57H5790
No. 9 for telephone, telegraph and fire alarm work, 400 in barrel. Weight, per barrel, 300 pounds. Price, 400 insulators. \$7.60
Price, each, less than barrel lots. 2½c
Price, each, less than barrel lots. 2½c

Glass Insulators.
No. 57H5999
No. 19. Deep groove double petticoat. Suitable for power and lighting line work. Shipping wt., 1½ lbs.
Price, each. 3¾c
Price, per barrel of 200. Weight, 275 pounds. 57.25

Porcelain Insulators or Knobs.

No. 57H5800 No. 4½. 1-inch space between bottom and groove. Height, 1½ inches; diameter, 1½ inches; hole, ¼ inch; groove, ¼ inch.

Price, per 100 (Shipping weight, 27 pounds). 85c

Price, per standard package of 1,000 (Shipping wt., 255 pounds). 57.25

Order a few more than actually required to allow for breakage in putting them up.

No. 57H5803 For telephone and telegraph line construction. Can be fastened to side of pole or house. Painted. Weight, each, 8 ounces.
Price, per sack, containing 100 brackets (Shipping weight, about 50 pounds). \$1.20
Price, each, in less than sack lots. .02½

Pony Oak Pins.
No. 57H5811 For telephone and telegraph line construction. Size, 1½x8 inches. For use on crossarms. Painted. Weight, each, about 8 ounces.
Per sack, containing 250 pins (Shpg. wt., 62 lbs.). \$1.75
Price, each, in less than sack lots. .01½

Malleable Iron Brackets.

57H5921 57H5923 57H5924
Insulator brackets made of malleable iron, are very rugged and will stand much abuse. These brackets are clean, well made malleable castings, japanned, and will be found very satisfactory.

No. 57H5921 Slant Arm Wall Bracket, size 2½x6 in. Shpg. wt., 12 57H5925 oz. Price, per dozen, 75c; each. .80

No. 57H5922 Wall Bracket. Size, about 3½x6½ in. Shipping wt., 1 lb. Price, per dozen, 95c; each. 1.00

No. 57H5923 Screw Bracket. Size, about 4½x8½ in. Shipping wt., 12 oz. Price, per dozen, 95c; each. 1.00

No. 57H5924 Drive Bracket. Size, about 4½x7½ in. Shpg. wt., 12 oz. Price, per dozen, 95c; each. 1.0c

No. 57H5925 Short Roof Bracket. Size, about 3½x3½ in. Shipping weight, 12 ounces.
Price, per dozen, 65c; each. 7c

Galvanized Brackets.
Galvanized Channel Iron Brackets, easy to install, substantial in construction and galvanized to meet weather conditions.

No. 57H5929 Single-Point Bracket. Length, 4½ in. Shipping weight, 12 ounces.
Price, each. .01 12c

No. 57H5928 Two-Point Bracket. Length, 12½ in. Shipping weight, 1½ pounds.
Price, each. .00 30c
Per dozen. 2.88

No. 57H5930 Three-Point Bracket. Length, 17 in. Shipping weight, 2½ pounds.
Price, each. .00 38c
Per dozen. 3.80

Oak Pole Steps.
No. 57H5814 Painted Oak Pole Step. Size, 1½x2x17 inches. Weight, each, 8 ounces.
Price, per 100 steps (Shipping weight, about 50 pounds). 95c
Price, each, in less than 100 lots. 1½c

Iron Pole Steps.
No. 57H5817 Hot Galvanized Iron Pole Step. Size, 1½x9 inches. Wt., each, 14 oz.
Price, per 100 steps (Shpg. wt., about 72 lbs.). 55.10
Price, each, in less than 100 lots. .07

Turnbuckles.
These Turnbuckles are made of malleable iron heavily galvanized.

No. 57H5865 Turnbuckle with two eyes. Size, 1½x6 inches. Shipping weight, about 3 lbs. Price. 67c

No. 57H5866 Turnbuckle with one hook and one eye. Size, 1½x6 inches. Shipping wt., about 3 lbs. Price. 65c

No. 57H5867 Turnbuckle with two eyes. Size, 1½x9 inches. Shipping weight, about 3½ lbs. Each. 80c

No. 57H5868 Turnbuckle with one hook and one eye. Size, 1½x9 inches. Shipping wt., about 3½ lbs. Price. 93c

No. 57H5869 Turnbuckle with one hook and one eye. Size, 1½x12 inches. Shpg. wt., about 3½ lbs. Each. 1.05

Wire Rope Clips.
Malleable iron clips, heavily galvanized.

Shpg. Wt., Price, Price,
No. Size per 100 Each per 100

57H5855 1½ in. 19 lbs. 4c \$3.50

57H5856 2½ in. 21 lbs. 4c 3.50

57H5857 3½ in. 28 lbs. 5½c 5.00



Fulton Special Hand Honed, Leather Tipped, Bevel Edge Socket Firmer Chisels

HIGH QUALITY.

FULTON SPECIAL

POLISHED FINISH.

No. 9H58102 High grade carefully finished chisels. Blades are crucible cast steel, carefully tempered, ground and honed by hand. Handles are long, well made and will not split. Handles are made of selected white hickory, tipped with leather. Fulton Special Chisels are guaranteed to give entire satisfaction. Be sure to state size wanted.
 Size, $\frac{1}{8}$ inch. Size, $\frac{1}{4}$ inch. Size, $\frac{3}{8}$ inch. Size, $\frac{1}{2}$ inch. Size, $\frac{5}{8}$ inch. Size, $\frac{3}{4}$ inch. Size, $\frac{7}{8}$ inch. Size, 1 inch. Size, $1\frac{1}{4}$ inches. Size, $1\frac{1}{2}$ inches. Size, $1\frac{3}{4}$ inches. Size, 2 inches.
 Wt., about 4 oz. Wt., about 5 oz. Wt., about 5 oz. Wt., about 6 oz. Wt., about 7 oz. Wt., about 8 oz. Wt., about 8 oz. Wt., about 11 oz. Wt., about 12 oz. Wt., about 13 oz. Wt., about 14 oz. Wt., about 15 oz. Wt., about 16 oz. Wt., about 17 oz. Wt., about 18 oz. Wt., about 19 oz. Wt., about 20 oz. Wt., about 21 oz. Wt., about 22 oz. Wt., about 23 oz. Wt., about 24 oz. Wt., about 25 oz. Wt., about 26 oz. Wt., about 27 oz. Wt., about 28 oz. Wt., about 29 oz. Wt., about 30 oz. Wt., about 31 oz. Wt., about 32 oz. Wt., about 33 oz. Wt., about 34 oz. Wt., about 35 oz. Wt., about 36 oz. Wt., about 37 oz. Wt., about 38 oz. Wt., about 39 oz. Wt., about 40 oz. Wt., about 41 oz. Wt., about 42 oz. Wt., about 43 oz. Wt., about 44 oz. Wt., about 45 oz. Wt., about 46 oz. Wt., about 47 oz. Wt., about 48 oz. Wt., about 49 oz. Wt., about 50 oz. Wt., about 51 oz. Wt., about 52 oz. Wt., about 53 oz. Wt., about 54 oz. Wt., about 55 oz. Wt., about 56 oz. Wt., about 57 oz. Wt., about 58 oz. Wt., about 59 oz. Wt., about 60 oz. Wt., about 61 oz. Wt., about 62 oz. Wt., about 63 oz. Wt., about 64 oz. Wt., about 65 oz. Wt., about 66 oz. Wt., about 67 oz. Wt., about 68 oz. Wt., about 69 oz. Wt., about 70 oz. Wt., about 71 oz. Wt., about 72 oz. Wt., about 73 oz. Wt., about 74 oz. Wt., about 75 oz. Wt., about 76 oz. Wt., about 77 oz. Wt., about 78 oz. Wt., about 79 oz. Wt., about 80 oz.

FULTON HAND SAWS.

Standard grade. Made of good grade saw steel ground four gauges thinner on the back than on the tooth edge. When ordering mention length and points wanted.

No. 9H59020 Skew Back Hand Saw.

No. 9H59021 Straight Back Hand Saw.

Weight, About Price, Each

Length, 24 inches—7, 8, 9 or 10 points to the inch.....

1 $\frac{1}{4}$ lbs. \$1.40

Length, 26 inches—6, 7, 8, 9, 10 or 12 points to the inch.....

2 lbs. \$1.55

Length, 28 inches—7 or 8 points to the inch.....

2 $\frac{1}{2}$ lbs. \$1.70

The Improved Fulton Special Ratchet Bit Brace

Frictionless roller bearings. Heavily nickel plated and nicely finished throughout.

SWEEP—High grade steel, 15-32 inch in diameter.

HEAD—Polished cocobolo, steel clad to protect it from being split or bruised. It is attached to the sweep by means of a steel quill that revolves on roller bearings.

HANDLE—Cocobolo, with brass bushings inserted in the end to prevent it from splitting. Revolves on patent adjustable tapered steel collars and bearings. By means of set screws any looseness from wear may be instantly taken up.

RATCHET—Simple in construction, easily operated, strong and durable. The ratchet teeth are cut on the end of the steel body that revolves in the socket attached to the sweep and are concealed and protected by this socket.

SLEEVE—Made of malleable iron, has knurled grip. Nickel plated.

CHUCK—Has forged steel jaws. Takes regular square shank bits and round shank bits up to $\frac{1}{8}$ inch in diameter. Will take a large size expansive bit.

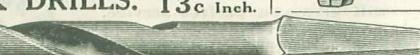
FINISH—All metal parts are polished and nickel plated. State size.

No. 9H56034

Weight, Abt., Lbs. Price

Sweep 8 inches.....	2 $\frac{1}{2}$	\$1.50
10 inches.....	2 $\frac{1}{2}$	1.75
12 inches.....	3	2.00
14 inches.....	3	2.25

BIT STOCK DRILLS. 13c 3-16 $\frac{1}{2}$ Inch.



These drills fit any bit brace and will drill steel, iron or other metals. Will bore any kind of wood without splitting and are not injured by contact with screws or nails. Carefully made by skilled workmen, only first quality material being used. All drills are ground to micrometer gauge and sizes are exact. All of our drills 3-32-inch and larger have solid steel forged shanks, thereby giving increased strength. Points of drills should be kept well oiled when drilling metal. State size wanted. No. 9H56720

Size, inch..... 1-16 3-32 $\frac{1}{8}$ 5-32 3-16 7-32 $\frac{1}{4}$ 9-32 $\frac{1}{4}$ 5-16 $\frac{1}{4}$ 11-32

Weight, about, oz.... 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 2 $\frac{1}{2}$ 2 $\frac{1}{2}$ 4 $\frac{1}{2}$ 4 $\frac{1}{2}$

Price, each..... 5c 7c 9c 11c 13c 15c 17c 19c 22c 1

Size, inch..... $\frac{3}{8}$ 13-32 7-16 15-32 $\frac{1}{4}$ $\frac{1}{2}$ $\frac{3}{4}$ $\frac{5}{8}$ $\frac{7}{8}$ $\frac{10}{8}$ 14

Weight, about, oz.... $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$ $\frac{1}{4}$

Price, each..... 28c 31c 34c 37c 42c 56c 70c 84c 98c

55c

$\frac{1}{2}$ -IN.

FULTON SOLID CENTER LONG SHANK AUGER BITS

WITH 12-INCH TWIST FOR DEEP AND HEAVY BORING.

Will bore a clean smooth hole in either soft or hard wood. Used extensively by electricians and others for boring deep holes that cannot otherwise be reached with a regular length auger bit. State size.

Size.....	$\frac{1}{4}$ in.	$\frac{1}{2}$ in.	$\frac{5}{8}$ in.	$\frac{3}{4}$ in.	$\frac{7}{8}$ in.	1 in.
Weight, about, ounces.....	4	5	6	8	10	12
No. 9H56382 Price, each.....	45c	55c	65c	75c	85c	95c

75c FULTON SPECIAL NAIL HAMMERS

No. 2. 85c No. 1 $\frac{1}{2}$.

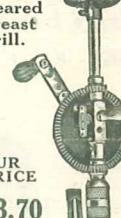
Full nickel plated, mahogany finished handles. Forged from crucible cast steel. Faces and claws are tempered just right. Claws are split to a fine point. Handles are made of selected second growth hickory, put in with iron wedges so they will not become loose. State size.

No. 9H57702 Size No..... 1 1 $\frac{1}{2}$ 2

Weight, with handle, about..... 26 oz. 22 oz. 18 oz.

Price..... 95c 85c 75c

Double
Geared
Breast
Drill.



OUR
PRICE
\$3.70

Has ball bearings, nickel plated steel frame, 6-inch drive wheel, extension crank, adjustable breast plate, and a protected gear level attachment. Parallel jaws take all sizes bit stock round and taper shank drills, $\frac{1}{8}$ to $\frac{1}{2}$ inch. Weight, about 6 lbs. No. 9H56626 Price..... \$3.70

Reamers for Wood or Iron.

or Iron. and up.

Made of high grade tempered tool steel. To be used in a bit brace. State size.

No. 9H3600

Size, inch..... $\frac{1}{4}$ 1-16 $\frac{3}{8}$ 7-16 $\frac{1}{4}$ 9-16 $\frac{5}{8}$ 11-16 $\frac{3}{4}$

Weight, about, oz.... 1 $\frac{1}{2}$ 1 $\frac{1}{2}$ 2 $\frac{1}{2}$ 3 $\frac{1}{2}$ 4 $\frac{1}{2}$ 6 $\frac{1}{2}$ 8

Price..... 30c 33c 36c 40c 45c 50c 56c 65c 75c

54c Taper Reamer for Wood or Iron.

54c Rosehead Countersink Bit. 19c

Made of high grade tool steel. Will ream holes from $\frac{1}{8}$ to $\frac{1}{2}$ inch. Does the work of six ordinary reamers. Weight, about 2 oz. No. 9H3602 Price..... 54c

Extension Bit Holder. 90c 12-in.

54c Angular Boring Attachment. \$1.70

Made of high grade tool steel, properly tempered. Countersinks holes up to $\frac{3}{4}$ inch. Weight, about 3 ounces. No. 9H5524 Price..... 19c

For boring deep holes or in any place that cannot be reached with an ordinary bit. Will follow into a hole $\frac{1}{8}$ inch or larger. State size.

No. 9H56348

Length, inches..... 12 18 24

Weight, about, oz.... 9 12 16

Price..... 90c \$1.10 \$1.35

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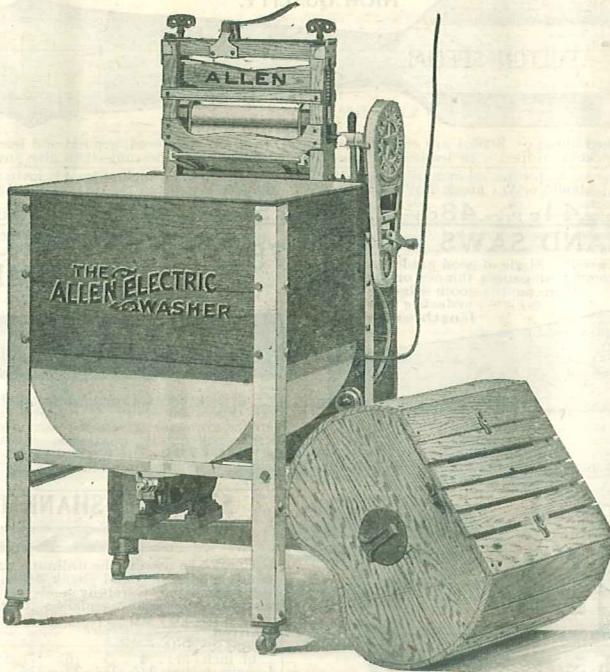
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THE ALLEN ELECTRIC WASHER

FAMILY SIZE

\$49²⁵



Showing the Allen Electric Washer with washing cylinder removed. The peculiar shape of the cylinder washes the clothes quickly and perfectly clean.

A Successful Washing Machine

The Allen Electric Washing Machine is one of the very latest types of electric machines and has met with wonderful success wherever it has been sold. It has been sold under another name in various parts of the country by special salesmen and by the power companies at prices ranging from \$65.00 to \$80.00 for the family size, six-sheet capacity machine. By our method of selling we are able to offer it at a big reduction and at the same time under our usual guarantee of satisfaction or money returned. In other words, you can order an Allen Electric Washing Machine and use it for thirty days in your own home. If for any reason you are dissatisfied or would rather have your money than the machine you can send it back to us and we will return the purchase price together with any freight or drayage charges you paid.

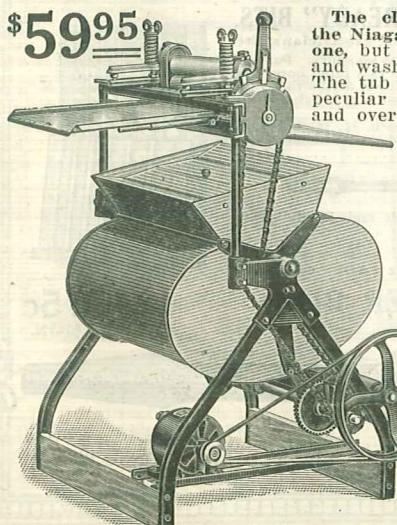
Shipped from factory in SOUTHERN MICHIGAN.

No. 44H75331 Allen Electric Washing Machine, family size, long, complete with 11-inch wringer. Shipping weight, 225 pounds. Price.....\$49.25

No. 44H75341 Allen Electric Washing Machine, extra large size, complete with 12-inch wringer. Shipping weight, 300 pounds. Price.....89.95

THE NIAGARA ELECTRIC WASHING MACHINE

\$59⁹⁵



The cleansing principle involved in the Niagara Washing Machine is a new one, but it has proven to be very easy and washes the clothes perfectly clean. The tub rocks back and forth and its peculiar shape turns the clothes over and over so all parts are subjected to the cleansing currents of water which are forced through and through the clothes at every rock of the tub. There is absolutely nothing which can catch, tear or wear the clothes. It will wash anything washable from the finest lace curtains to the heaviest blankets or overalls.

THE TUB is made of heavy corrugated copper, heavily retinned inside. Measures 23x18 $\frac{1}{4}$ x19 inches and has washing capacity of six sheets or thirty-five average mixed pieces. Wringer has high grade white rubber rolls and can be started, stopped or reversed by a simple movement of a small lever. Removable and adjustable trays are provided to conduct clothes in either direction from the wringer.

Handsome finish in white enamel with polished copper tub and trays. Shipping weight, 185 lbs. Shipped from factory in NORTHEASTERN ILLINOIS.

No. 44H75621 Niagara Electric Washing and Wringer Machine. Price.....\$59.95

EXTRA LARGE SIZE

\$89⁹⁵

A Practical Washing Machine

The Allen is a very practical washing machine. The clothes are placed in the wood cylinder which hangs in the tub and this cylinder rocks a full three-quarter revolution back and forth. This dashes the clothes through the suds, cleaning them very rapidly and without wearing or tearing them or even pulling them out of shape, so you can safely wash the finest laces or heaviest blankets. The cylinder can be removed easily.

THE TUB is well made of wood and metal securely bound together at the corners by the angles which form the legs and these are fitted with roll easy casters so machine can be easily moved. Clothes do not come in contact with the metal at any time.

THE WRINGER IS GENEROUS IN SIZE and has extra high grade rubber rolls. It can be stopped or started in either direction by moving one simple little lever. The machine measures 37 inches high and 24 inches wide, outside measurements, and will go through a 26-inch door opening. Each machine is furnished complete with electric motor and all connections, ready to use.

No. 44H75331 Allen Electric Washing Machine, family size, six-sheet capacity, or equivalent, measures 26 inches long, complete with 11-inch wringer. Shipping weight, 225 pounds. Price.....\$49.25

No. 44H75341 Allen Electric Washing Machine, extra large size, twelve-sheet capacity, measures 36 $\frac{1}{2}$ inches long, complete with 12-inch wringer. Shipping weight, 300 pounds. Price.....89.95

THE WIZARD ELECTRIC WASHING MACHINE

\$27⁹⁵



This is a very good washing machine without wringer and will give you perfect service. However, we advise you to buy a machine with electrically driven wringer and thus eliminate all the hard work in connection with the washing of clothes. Space for hand operated wringer is provided on this machine but an electrically driven wringer cannot be applied later. Washing is accomplished by the well known dolly movement. Dolly rotates three-quarter revolution and reverses. Has well finished tub, measuring 22 $\frac{1}{4}$ inches in diameter, and 12 inches deep, inside measurements, mounted on substantial cross braced legs. Gearings are extra heavy for power work and machine is fully guaranteed. Shipping weight, 140 pounds. Shipped from factory in NORTHEASTERN ILLINOIS.

No. 44H75321 Wizard Electric Washing Machine. Price.....\$27.95

THE CHICAGO ELECTRIC WASHER

STARTS AS EASILY
AS TURNING ON AN
ELECTRIC LIGHT

The Machine to Use With
Stationary Laundry Tubs



\$39⁹⁵

Conveniently Used With
Ordinary Tubs and
Bench.



Our Most Popular Machine.

Has the time proven rotary dolly type washing movement and the latest type swinging reversible wringer.

NOTICE THE CONSTRUCTION: A heavy solid steel stand which carries the tub and all mechanism, a high grade tub, measuring 22 $\frac{3}{4}$ x 12 inches inside, made of lumber that is especially adapted for washing machine use, and a high grade wringer that can be stopped or started in either direction by a simple lever movement and swung to any position as illustrated. Machine occupies a floor space less than 2 feet square, yet it will do all that any of the big cumbersome platform machines will do. If you have stationary tubs, it is just the machine you want. If you use ordinary tubs, it is just as convenient and your separate tubs can be set on any bench you have or on our separate steel tub bench, which is very handy.

Notice how conveniently the clothes are wrung from the washing machine tub into the rinse water. Simply raise the lid to stop the washing mechanism.

The Electric Motor Can Operate Washer and Wringer at the Same Time.

In these illustrations we show how another batch of clothes can be washed in the machine at the same time that the clothes are being wrung through the electrically driven wringer from the rinse water into the blue water. A time and labor saving feature.

The Chicago Electric Washer is a strong and durable machine, all parts of the mechanism being built much heavier than it has been customary to make these parts.

The last operation of wringing the clothes out of the blue water into the basket can be accomplished and another batch of clothes can be washing at the same time, if necessary. There is no waiting when you use a Chicago Electric Washer, as the washer and wringer can be operated together or separately, just as desired.

Price List.

The Chicago Electric Washing and Wringing Machine is furnished complete with wringer and electric motor, with connections consisting of connecting rod and attachment plug all ready for use. Price does not include the extra tubs and extra steel tub bench illustrated. Shipping weight, 235 pounds. Shipped from factory in NORTHEASTERN ILLINOIS.

No. 44H75551 Chicago Electric Washing and Wringing Machine. \$39.95
Price.....

No. 44H75441 Extra Steel Tub Bench. Shipping weight, 25 pounds. \$1.83
Price.....

ELECTRICAL HOUSE WIRING SUNDRIES and GAS BURNERS



Porcelain Fuseless Rosette. Equipped with a cap which snaps in place by a slight turn.

No. 34D6740

Price, each...12c



Bryant "New Wrinkle" Keyless Socket. Brush brass or polished brass finish. State finish desired. $\frac{1}{2}$ -inch c. a. Edison base.

No. 34D6502

Price, each...28c

Price, each, in lots of 25 to 100...24c

Price, each, in lots of 100 to 500...20c



Bryant "New Wrinkle" Key Socket. Brush brass or polished brass finish. State finish desired. $\frac{1}{2}$ -inch c. a. Edison base.

No. 34D6500

Price, each...30c

Price, each, in lots of 25 to 100...26c

Price, each, in lots of 100 to 500...22c



Bryant "New Wrinkle" Chain Pull Socket. Brush brass or polished brass finish. State finish desired. $\frac{1}{2}$ -inch c. a. Edison base. 6-inch chain.

No. 34D6504

Price, each...58c

Price, each, in lots of 25 to 250...40c



Keyless Wall Socket. With brass bayonet shell. Porcelain wall base. Holes for supporting screws, spaced $\frac{1}{4}$ inch on centers. Edison base.

No. 34D6509

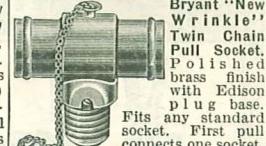
Price, each...23c



Bryant "New Wrinkle" Key Wall Socket. Edison base. Brush brass (satin brass) finish. Porcelain wall base. Holes for supporting screws spaced $\frac{1}{4}$ inches on centers.

No. 34D6506

Price, each...43c



Bryant "New Wrinkle" Twin Chain Pull Socket. Polished brass finish with Edison plug base. Fits any standard socket. First pull connects one socket, second pull connects both sockets, third pull connects one socket, fourth pull disconnects both sockets.

No. 34D6558

Each...\$1.35



Plug Cluster, with a porcelain body and brass body shell in brush brass finish. To increase the number of lights or to operate an electric fan and one light at the same time.

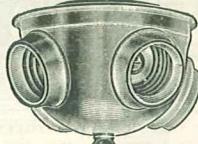
No. 34D6552

2-light. 80c

No. 34D6553

3-light. 1.04

Price, each...1.04



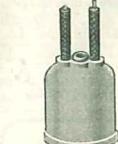
Wireless Cluster. Has a porcelain body with a genuine brass body shell in brush brass or polished brass finish. State finish desired.

No. 34D6550

3-light. \$1.35

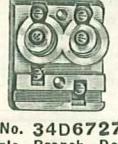
No. 34D6551

4-light. \$1.55



Weatherproof Porcelain Keyless Socket. Fitted with 6 inches of No. 14 B. & S. Standard rubber covered wire. Edison base. For outdoors and in damp places.

Price, each...11c



Single Branch Double Pole Cut-Out Block.

Price, each...19c

No. 34D6728

Double Branch Three-Wire Cut-Out Block.

Price, each...39c



Twenty-Five Ampere Porcelain Combination Main Line or Entrance Switch and Cut Out. For plug fuses.

No. 34D6729

Double Branch Two-Wire Cut-Out Block.

Price, each...59c



No. 34D6736 Turn Button Switch. Single pole; five amperes. Polished nickel finish.

Holes for supporting screws are spaced $\frac{1}{4}$ inches on centers.

Price, each...21c

No. 34D6735 Same as

No. 34D6736 but three-way.

Price, each...36c



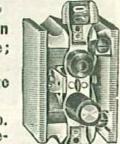
No. 34D6730 Push Button Switch. Singlepole; five amperes.

Price, each...42c

No. 34D6731 Same as No.

34D6730, but three-way.

Price, each...63c



No. 34D6732 Wall Flush Plate for Switch No. 34D6730 when one switch is used. Made of genuine brass in brush brass finish. Complete with screws. Price, each...13c

No. 34D6734 Wall Flush Plate for Switch No.

34D6730 when two switches are used.

Price, each...26c

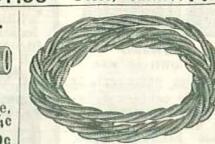
No. 34D6556 Attachment Plug.

Having a rotating sleeve which makes it possible to attach the plug quickly without twisting the cord.

Price, each...15c



Porcelain Tubes.



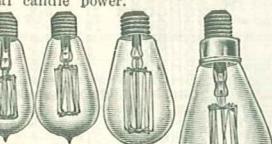
No. 34D6745 Cotton Covered Electric Drop Cord. Two conductors twisted. 18-gauge. $\frac{1}{2}$ x 3 inches. Price, each...14c

Per 100 feet...1.00

TUNGSTEN LAMPS.

Standard Edison Base.

Consume one-third the amount of current used by a carbon lamp of equal candle power.



Notice—Tungsten metal can be very easily broken by rough handling. We cannot guarantee safe delivery by parcel post.

Clear Glass Tungsten Lamps.

No. 34D6810 25-watt. 60-watt.

Price, each...22c

Price, each, in standard package (200 lamps)...16c

No. 34D6802 16-candle power.

110 volts. Price, each...17c

Price, each, in standard package (200 lamps)...17c

No. 34D6804 32-candle power.

110 volts. Price, each...26c

Price, each, in standard package (100 lamps)...25c

Frosted Bottom Tungsten Lamps.

No. 34D6811 25-watt.

Price, each...24c

Price, each, in standard package (100 lamps)...22c

No. 34D6812 40-watt.

Price, each...22c

Price, each, in standard package (100 lamps)...20c

No. 34D6814 60-watt.

Price, each...29c

Price, each, in standard package (50 lamps)...30c

No. 34D6816 100-watt.

Price, each...52c

Price, each, in standard package (24 lamps)...49c

Tungsten Lamps.

No. 34D6815 60-watt.

Price, each...32c

Price, each, in standard package (50 lamps)...30c

No. 34D6817 100-watt.

Price, each...57c

Price, each, in standard package (24 lamps)...54c

HOUSE AND FIXTURE WIRE.

No. 34D6796 Flexible Silk Covered Duplex Lamp Cord in one casing, 6 feet in length, with rotating sleeve plug attached.

Price, complete...39c

CLOTHED

No. 34D6797 Clothed Lamp Cord.

Price, complete...39c

INCANDESCENT GAS MANTLES.

Quoting our mantles by the half dozen enables us to sell them at a very low price and assures the family of having extra mantles in the house in case the one on the lamp should break suddenly.

BLACK DIAMOND MANTLES.

XXX Sears Special Quality.

Brilliant, durable, non-shrinkable, uniform.

Genuine Ramie thread.

Triple weave, double thorium impregnation mixed with carbon.

No. 34D2450 Black Diamond Cap Mantle.

Mounted on metal cap and magnesia coated wire.

Price, half doz...98c

ACETYLENE GAS BURNERS.

The pillar is made of solid brass, nickel plated and is fitted with one-piece imported genuine German lava tip.

No. 34D69300 1/2-Foot Burner.

Price, each...11c

No. 34D69310 1/4-Foot Burner.

Price, each...11c

No. 34D69320 1-Foot Burner.

Price, each...11c

No. 34D69330 1 1/2-Foot Burner.

Price, each...16c

No. 34D69340 1 1/2-Foot Burner.

Price, each...16c

No. 34D69350 1 1/2-Foot Burner.

Price, each...16c

No. 34D69360 1 1/2-Foot Burner.

Price, each...16c

No. 34D69370 1 1/2-Foot Burner.

Price, each...16c

No. 34D69380 1 1/2-Foot Burner.

Price, each...16c

No. 34D69390 1 1/2-Foot Burner.

Price, each...16c

No. 34D69400 1 1/2-Foot Burner.

Price, each...16c

No. 34D69410 1 1/2-Foot Burner.

Price, each...16c

No. 34D69420 1 1/2-Foot Burner.

Price, each...16c

No. 34D69430 1 1/2-Foot Burner.

Price, each...16c

No. 34D69440 1 1/2-Foot Burner.

Price, each...16c

No. 34D69450 1 1/2-Foot Burner.

Price, each...16c

No. 34D69460 1 1/2-Foot Burner.

Price, each...16c

No. 34D69470 1 1/2-Foot Burner.

Price, each...16c

No. 34D69480 1 1/2-Foot Burner.

Price, each...16c

No. 34D69490 1 1/2-Foot Burner.

Price, each...16c

No. 34D69500 1 1/2-Foot Burner.

Price, each...16c

No. 34D69510 1 1/2-Foot Burner.

Price, each...16c

No. 34D69520 1 1/2-Foot Burner.

Price, each...16c

No. 34D69530 1 1/2-Foot Burner.

Price, each...16c

No. 34D69540 1 1/2-Foot Burner.

Price, each...16c

No. 34D69550 1 1/2-Foot Burner.

Price, each...16c

No. 34D69560 1 1/2-Foot Burner.

Price, each...16c

No. 34D69570 1 1/2-Foot Burner.

Price, each...16c

No. 34D69580 1 1/2-Foot Burner.

Price, each...16c

No. 34D69590 1 1/2-Foot Burner.

Price, each...16c

No. 34D69600 1 1/2-Foot Burner.

Price, each...16c

No. 34D69610 1 1/2-Foot Burner.

Price, each...16c

No. 34D69620 1 1/2-Foot Burner.

Price, each...16c

No. 34D69630 1 1/2-Foot Burner.

Price, each...16c

No. 34D69640 1 1/2-Foot Burner.

Price, each...16c

No. 34D69650 1 1/2-Foot Burner.

Price, each...16c

No. 34D69660 1 1/2-Foot Burner.

Price, each...16c

No. 34D69670 1 1/2-Foot Burner.

Price, each...16c

No. 34D69680 1 1/2-Foot Burner.

Price, each...16c

No. 34D69690 1 1/2-Foot Burner.

Price, each...16c

No. 34D69700 1 1/2-Foot Burner.

Price, each...16c

No. 34D69710 1 1/2-Foot Burner.

Price, each...16c

No. 34D69720 1 1/2-Foot Burner.

Price, each...16c

No. 34D69730 1 1/2-Foot Burner.

Price, each...16c

No. 34D69740 1 1/2-Foot Burner.

Price, each...16c

No. 34D69750 1 1/2-Foot Burner.

Price, each...16c

No. 34D69760 1 1/2-Foot Burner.

Price, each...16c

No. 34D69770 1 1/2-Foot Burner.

Price, each...16c

No. 34D69780 1 1/2-Foot Burner.

Price, each...16c

No. 34D69790 1 1/2-Foot Burner.

Price, each...16c

No. 34D69800 1 1/2-Foot Burner.

Price, each...16c

Good Lights Make Good Auto Insurance

STANDARD AUTO SPOT LIGHT.

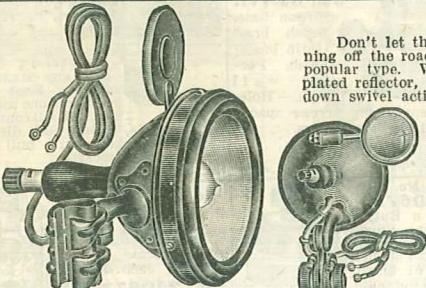
Don't let the pleasures of night riding be spoiled for you by the thought of losing your way, running off the road, running into other cars or obstructions at turns, etc. A standard searchlight of new popular type. Well made and finished black enameled. Furnished with about 6-inch front and silver plated reflector, with 6-volt 24-candle power nitrogen bulb reflecting powerful light rays. Has up-and-down swivel action. Fitted with handy adjustable rear sight mirror at top rear. Complete with about 5 feet of lighting cord and on and off switch at handle end, with push and pull focusing device. Furnished with universal bracket jaws for round, square or oval windshield frame. Shipping weight, about 4½ pounds. For use on Ford cars, order No. 28H13058 Spot Light, if spot light is to be operated from magneto. If used in connection with 6 to 8-volt storage battery on Ford cars, order No. 28H13050 Spot Light.

No. 28H13050 Standard Auto Spot Light. Price.....\$3.75

No. 28H13071 Nitrogen Spot Light Bulb, 6-8 volt, 24-candle power, single contact. Ediswan base. Extra bulb for use with No. 28H13050 Spot Light. Price. 38c

No. 28H13058 Standard Auto Spot Light for Ford cars. Has 18-24 volt, 24-candle power, single contact Ediswan base nitrogen bulb. Price.....\$3.95

No. 28H13072 Extra Bulb 18-24-volt, 24-candle power, single contact Ediswan base nitrogen bulb. Extra bulb for use with No. 28H13058 Spot Light. Price. 40c



Leader Tail Lamp.

A reliable oil tail lamp; will not readily go out in use. Black enamel finish. Height, about 9 inches; has ruby color lens about 2½ inches and front lens about 3¼ inches. Shpg. wt., abt. 1¾ lbs.

No. 28H5748 Leader Tail Lamp. Price, each.....\$1.10

Lamp Bases.



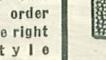
Candelabra



Ediswan



Single Contact



Double Contact

Be sure to order the right style base.



Dash Trouble Lamp.

A combination dash trouble lamp, has 2-candle power, 6-volt tungsten bulb, wood dash connector and 10-foot extension cord fitted with plug on one end and socket on other. Has handy on and off switch. All fittings Ediswan, for wood dash. Shipping weight, either style, about 1½ pounds.

No. 28H6328 Combination Dash and Trouble Lamp, double contact connector plug. \$1.65

No. 28H6329 Combination Dash and Trouble Lamp, single contact connecting plug. \$1.68

Price.

No. 28H6255 C. S. Dash 70c

C. S. Dash Lamp.

A not standard type dash lamp. Furnished with 6-volt 2-candle power tungsten lamp with Ediswan socket. Has on and off switch. Furnished nickel plated. Length, about 3½ inches. Complete with wire leads.

No. 28H6255 C. S. Dash 70c

Lamp. Price.

No. 28H6250 C. S. Extension Dash Lamp. 75c

C. S. Extension Dash Lamp.

An extension type dash lamp, similar to No. 28H6255 C. S. Dash Lamp, but about 1½ inches long, extending about 1¼ inches from dash. Handy on and off switch. Complete with 6-volt 2-candle power tungsten lamp, with Ediswan socket and wire leads. Shipping weight, 12 ounces.

No. 28H6250 C. S. Extension Dash Lamp. 75c

Lamp Tubing.

Standard red rubber lamp tubing, ½-in. opening, ½-in. wall. Shpg. wt., abt. ½ oz. per foot.

No. 28H6595 Rubber Tubing. 4c

Price, per foot.

No. 28H5825 28H5825

Perfection Gas Burner.

A well known high grade burner. Made of lava. Furnished in two sizes, ½ or ¾ foot. State size.

No. 28H5825 Perfection 19c

Burner. Price, each.

No. 28H5855 Alco De Luxe Burner.

Lava parts threaded to screw into nickel plated pillar, ½ or ¾ foot size. (Not illustrated.) Nickel plated.

No. 28H5855 Alco De Luxe Burner. 20c

Shipping wt., either style, about 2 oz.

No. 28H6356 Portable Lamp Cord.

New code type P saturated braid Portable

cord No. 18, Shpg. wt., per ft., abt. 1 oz.

No. 28H6359 Price, per foot. 5c

Our "Fourteen" Leader Tool Kit.

Excell-All "Forty" Tool Kit.

A complete assortment of standard tools, forty in number, practically everything necessary for making repairs. Includes a complete assortment of wrenches, punches, chisels, pliers, screwdrivers, files, soldering accessories, hammer, hack saw, etc. Shipping weight, about 16 pounds.

No. 28H11270 Excell-All "Forty" Tool Kit. Price, complete with roll. \$11.15

No. 28H11271 Tool Roll only. Shipping weight, about 1 lb. 9 oz. Price. 1.30

Autoists' "Thirty" Kit.

This kit contains all tools needed for ordinary repairs.

Complete with thirty standard tools in water resisting heavy canvas tool roll, with sewed and riveted leather retaining straps. This kit practically duplicates on a smaller scale our Excell-All Kit No. 28H11270, shown above. Shpg. wt., abt. 12 lbs.

No. 28H11250 Autoists' "Thirty" Kit. \$7.20

Price, complete with roll. 1.00

No. 28H11251 Tool Roll only. Shipping weight, about 1½ pounds. Price. 1.00

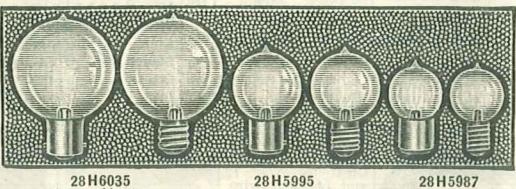
COACHMAN SPEED-NUT WRENCH

A popular socket wrench set. Enables you to remove any nut or cap screw by ratchet motion. Set comprises standard universal, reversible, pressed steel ratchet wrench handle, extension bar, two screwdriver bits, universal joint spark plug socket with ½-to-1½ inch opening size and thirty hardened steel sockets. Outfit includes twenty-seven hexagon wrench sockets, having opening sizes from ½ to 1½ inches; sizes from ½ to 1 inch, graduated ½ inch; sizes larger than 1 inch, 1½, 1¾, 2½, 2¾ and 3½ inches, three square wrench sockets having opening sizes, ½, ¾, 1, 1½ and 2½ inches. Complete with hardwood box. Shpg. wt., abt. 9 lbs. \$6.90

No. 28H11203 Aristocrat No. 1 Socket Wrench Set. 75c

You Will Find Many Uses for Electric Flash Lights. Select From Pages 16 and 17.

Mazda Tungsten Lamps



Shown ¼ size. Shown ½ size. Shown ¾ size.

Standard well known Tungsten lamp bulbs, Nos. 28H6035, 28H6037 and 28H6038 are for headlight use, with candelabra or double contact Ediswan base. No. 28H6031 is a headlight bulb of the same type but about one-sixth smaller. Nos. 28H5995 and 28H5996 are side lamp bulbs; furnished only with candelabra or double contact Ediswan base. Nos. 28H5987 and 28H5988 Lamp Bulbs are for tail light use and are furnished only with candelabra or double contact Ediswan base.

No. 28H6035 12 6-8 1.50 6 oz. 20c

28H6037 15 6-8 2.50 6 oz. 20c

28H6038 21 6-8 3.50 6 oz. 22c

28H6031 12 6-8 2.00 6 oz. 20c

28H5995 4 6-8 .84 3 oz. 16c

28H5996 6 6-8 1.20 3 oz. 18c

28H5987 2 6-8 .42 3 oz. 16c

28H5988 4 6-8 .84 3 oz. 18c

Single (Center) Contact Lamp, Ediswan Base only. See illustrations in column at left.

28H6040 15 6-8 2.50 6 oz. 20c

28H6050 21 6-8 3.50 6 oz. 22c

28H6032 12 6-8 2.00 6 oz. 20c

28H5998 4 6-8 .84 3 oz. 16c

28H5990 2 6-8 .42 3 oz. 16c

Nitrogen Bulbs, Double Contact Ediswan Base only.

28H6075 21 6-8 2.5 6 oz. 26c

Nitrogen Bulbs, Single Contact Ediswan Base only.

28H6076 21 6-8 2.5 6 oz. 26c

Nitrogen Bulbs, Double Contact Ediswan Base only.

28H6080 36 6-8 4.00 6 oz. 57c

Nitrogen Bulbs, Single Contact Ediswan Base only.

28H6081 36 6-8 4.00 6 oz. 57c

Convex Prismo Dimmers change the blinding head-light glare to an equally effective softened diffused light. Furnished in pairs in seven sizes, as listed below.

No. Size, Shipping Wt., Price

28H5696 8½ 11 1½ \$0.75

28H5697 8½ 11 1½ .85

28H5698 9 12 1½ .85

28H5699 9½ 12 1½ .90

28H5700 10 13 2 .95

28H5734 9½ 12 2 1.00

28H5736 10 13 2 1.00

Mangin Mirror Headlight.

A standard well made gas headlight. Fitted with 6-inch Mangin mirror and a nickel plated band reflector, projecting light correctly. Furnished in two finishes, black enameled throughout and black enameled body with nickel plated door. Widths given between projectors.

No. 28H5354 Door diameter, about 10 inches;

width, about 8 inches; length (depth), about 7 inches. Shipping weight, about 8½ lbs.

All black finish. Price, each.....\$2.90

No. 28H5355 Same as No. 28H5354. 2.95

Black and nickel plated finish. Each....



Margin Mirrors.

Accurately ground lenses with durable silver plating on back.

Diam., In. Oz. Lbs. Each

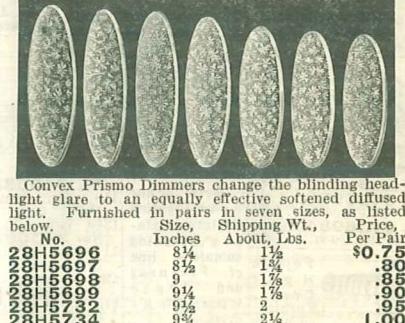
28H5685 5 11 1½ \$0.50

28H5686 8 18 1½ .75

28H5687 7 27 2½ .95

28H5688 8 44 3½ 1.35

Convex Prismo Dimmers.



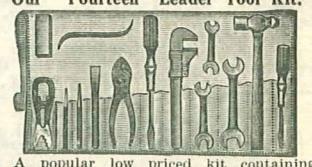
Leader Trouble Finder.

Our leader trouble lamp. Has 6-volt 6-candle power lamp, candelabra socket, 10 feet of lighting cord and copper terminals. Wire guard protects bulb. Handle has hook for hanging up lamp. Shipping weight, about 9 ounces.

No. 28H6210 Leader Trouble Lamp. Price.....70c



Our "Fourteen" Leader Tool Kit.



A popular low priced kit containing fourteen standard most used tools. Complete with case with individual pockets. Shipping weight, about 5½ pounds.

No. 28H11290 "Fourteen" Leader Tool Kit. Price.

No. 28H11291 Roll only. Shipping weight, about 6 ounces. Price.

Cochran Speed Nut Wrench.

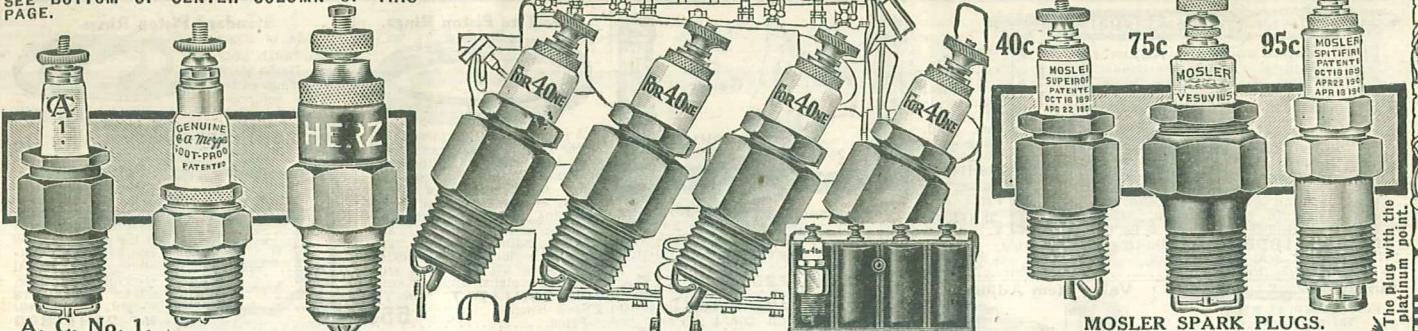


Quickly grips any square or hex nut. Opening size from about ½ to 1½ inches. Ratchets on nut, holding nut firmly. Requires no thumb adjustment. Practically a whole wrench kit in one. Shipping weight, about 1¼ pounds.

No. 28H11220 Cochran Speed Nut Wrench. Price.....75c

Current Needs for Good Ignition

FOR STANDARD STYLES OF SPARK PLUGS
SEE BOTTOM OF CENTER COLUMN OF THIS
PAGE.



A. C. No. 1.

A well known standard porcelain plug, furnished in three standard sizes. Shpg. wt., any size, 5 oz.
No. 28H7475
1/2-inch size. **75c**
Price. **75c**
No. 28H7476
Metric size. **75c**
Price. **75c**
No. 28H7477
A. L. A. M. size. **75c**
Price. **75c**
No. 28H7495
Extraporcelain. Shpg. wt., 4 oz. **28c**

Mezger Sootproof.

A well known reliable spark plug, furnished in three standard sizes. Shipping wt., any size, 5 oz.
No. 28H7596
1/2-inch size. Price. **50c**
No. 28H7597
Metric size. Price. **50c**

Herz.

A famous spark plug, noted for its efficiency. Furnished in two sizes. Shpg. weight, either size, about 6 ounces.
No. 28H7374
1/2-in. iron pipe size. Price. **\$1.00**
No. 28H7375
A. L. A. M. size. Price. **\$1.00**

Leader.

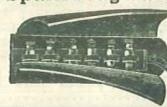
A low priced mica plug; good value for the money. Furnished in three standard sizes. Shipping weight, any size, about 4 ounces.
No. 28H7390 1/2-in. size. **35c**
Price. **35c**
No. 28H7391 Metric size. **35c**
Price. **35c**
No. 28H7392 A. L. A. M. size. Price. **35c**

Standard Spark Plug Wrench.



Standard spark plug wrench with removable hand rod. Has about 29/32-inch opening size. Shipping weight, about 1 lb.
No. 28H7668 Standard Spark Plug Wrench. **16c**

Spark Plug Case.



Keep your extra spark plugs clean. Made of enameled steel cloth with loops to hold strip plugs. Shipping weight, about 3 ounces.
No. 28H5325 Spark Plug Case. **12c**

PARANITE IGNITION CABLE.

High Tension Magneto.

High tension magneto cable designed especially for magneto use. 3/8-inch wall of rubber. Outside diameter, 25/64 in. Shpg. wt., per ft. abt. 1 1/2 oz.
No. 28H8300 No. 38 High Tension Magneto Cable. Price, per foot. **11c**

Low Tension Cable.

Conductor composed of stranded tinned copper wire covered with braids of glazed cotton with two coats of enamel baked on. Outside diameter, 1 1/4 in. Shipping weight, per foot, about 1 ounce.
No. 28H8302 No. 30 Paraparite Low Tension Cable. Price, per foot. **4c**

Paraparite Two-Strand

No. 30-2 Paraparite Two-Strand Low Tension Cable. Shipping weight, per foot. **7c**
No. 28H8306 No. 30-3 Paraparite Three-Strand Low Tension Cable. Outside diameter, 31/64 inch. Shipping weight, per foot, about 2 ounces. Price, per foot. **10c**

High Tension Cable.

An excellent low priced high tension magneto cable. Outside diameter, 20/64 inch.
No. 28H8308 No. 32 Paraparite High Tension Cable. Shipping weight, per foot, about 1 1/2 oz. ounces. Price, per foot. **7c**

Peerless Ignition Cable.

A reliable low priced insulated cable for primary and secondary wiring. Outside diameter, 21/32 in. Shpg. Wt., Price.
No. 28H8488 Primary 21 21/32 in. 1 oz. **3c**
No. 28H8490 Secondary 33 21/32 in. 2 oz. **6c**
No. 28H8493 Secondary .. 1/2 in. 3 oz. **8c**

Famous Bulldog Battery Connection.

Snap them on and they will never jar off. Well made connections.
No. 28H8725 Shipping wt., 2 oz. Each. **4c**
No. 28H8726 Shpg. wt., 4 oz. Box of 10. **25c**

Our 4-for-1 Spark Plug Outfit.

Four standard type spark plugs, complete with fabric case, at the usual price of one good plug. Standard open end porcelain plugs, furnished in 1/2-inch, metric or A. L. A. M. sizes. In ordering specify size desired. Shipping weight, about 1 1/2 pounds.
No. 28H7435 Our 4-for-1 Spark Plug Set. Price, per set. **90c**

Champion Priming.

A well known reliable spark plug which needs no description. Will help start your motor quickly in cold weather by injecting gasoline in priming cup. Furnished in two sizes only. Shipping wt., either size, 6 ounces.

No. 28H7430 1/2-inch standard pipe size. Price. **.89c**

No. 28H7482 A. L. A. M. size. Price. **.89c**

No. 28H7480 1/2-inch standard pipe size. Price. **.89c**

No. 28H7485 1/2-inch size. Price. **.70c**

No. 28H7487 A. L. A. M. size. Price. **.70c**

REGULAR.



PRIMING.

ELECTRICAL SUNDRIES

Stand-By Special Automobile Dry Battery.



A standard storage battery of unusually good construction. Furnished in four sizes, the two smaller ones for ignition, the other two for ignition and lighting. An efficient, high grade battery which will give splendid satisfaction. Battery should be recharged every six to eight weeks to avoid possible sulphating and ruining of plates.

Height, Width, Length, Shpg. wt., Inches, Inches, Inches, Overall Wt., Lbs. Price.
No. 28H8521 1/4 8-V. 40-Amp. 8 1/2 6 3/8 8 20 \$ 7.35
No. 28H8516 1/4 8-V. 60-Amp. 8 1/2 7 1/8 8 3/4 36 **9.95**
No. 28H8510 1/4 6-V. 80-Amp. 8 1/2 7 1/8 10 1/4 42 **14.25**
No. 28H8505 1/4 6-V. 120-Amp. 8 1/2 7 1/8 12 3/4 54 **18.95**

Peerless Storage Batteries.



Acid Testing Syringe.

For testing acid and filling storage batteries with electrolyte. By watching the specific gravity of the cells you can often detect conditions that may mean trouble if prompt action is not taken. Shpg. wt., about 1 lb.
No. 28H8560 Acid Testing Syringe. Price. **55c**



Metric size. A. L. A. M. size.

MOSLER SPARK PLUGS.

Superior.

An efficient, inexpensive open end porcelain spark plug. Furnished in three sizes. Comes in neat lithographed can. Furnished only in 1/2 inch and A. L. A. M. sizes. Shpg. wt., any size, 5 ounces.

No. 28H7520 1/2-inch size. Price. **40c**

No. 28H7521 Metric size. **40c**

No. 28H7522 A. L. A. M. size. Price. **40c**

No. 28H7532 A. L. A. M. size. Price. **75c**

Kingston.

A well known reliable mica plug made by the Kokomo Electric Co. Furnished in three standard sizes. Shipping weight, any size, about 4 ounces.

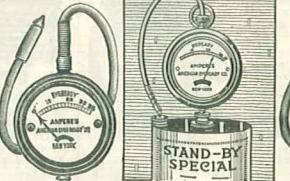
No. 28H7450 1/2-inch standard pipe size. Price. **40c**

No. 28H7451 Metric size. Price. **40c**

No. 28H7452 A. L. A. M. size. Price. **40c**

Eveready Automobile Battery Testing Meters.

Ammeter.



Registers from 0 to 35 amperes. Nickel plated; complete with cloth bag. Shipping weight, 5 ounces.

No. 28H844 Eveready Ammeter. Price. **70c**

Combination.

This is an Automobile Ammeter and a Voltmeter in one instrument. Registers from 0 to 35 amperes and 0 to 10 volts. Complete with cloth bag. Shipping weight, 5 ounces.

No. 28H8853 Automobile Combination Ammeter-Voltmeter. Price. **89c**

Standard Dash Coils.

Standard dash coils, made by the Pfannstiel Electric Co. Have many excellent features; very efficient. Produce a hot flame, consume current economically, and keep in correct adjustment well. Come in three styles as listed below, with a magneto kick switch.

No. 28H7755 1 Cylinders. Shpg. Wt., Abt. Lbs. Price. **\$ 6.43**

No. 28H7756 2 Cylinders. Shpg. Wt., Abt. Lbs. Price. **8**

No. 28H7758 4 Cylinders. Shpg. Wt., Abt. Lbs. Price. **15**

Challenge Coils.

A very serviceable low priced coil. For one and two-cylinder engines only.

No. 28H7813 Challenge Coil, one-cylinder size, Shpg. wt., about 4 lbs. Price. **\$ 2.45**

No. 28H7814 Challenge Coil, two-cylinder size, Shpg. wt., about 7 lbs. Price. **\$ 4.75**

Accessories for the Ford Engine

ENGINE ACCESSORIES.

Valves and Valve Adjusters. Adjustable valves save replacement expense of new valves, push rods and springs. Come in sets of eight, complete with spring seats and locknuts, without valve springs. Shpg. wt., per set, about 2½ lbs. No. 28H11899 Adjustable. \$2.25

Spring Seat and Locknut for placing extra tension of nearly ¼ inch on weak, worn valve springs. Come in sets of eight. Shipping weight, per set, about 1 pound.

No. 28H11898 Valve Adjusters, comprising spring seat and locknut, 70c 5/16x18 thread. Per set.....

Valve Reseater. For reaming out valve seat when valve is badly pitted and imperfectly seated. Cutting surface made of hardened steel, balance of tool cold rolled steel. Has cutter complete with pilot. Shpg. wt., about 12 oz. No. 28H1253 Valve Reseater. Price, 40c

Valve Grinder. Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4½ inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price..... 25c

IGNITION.

TIMERS. A high grade roller contact timer, for late 1912 and all 1913-1917 Ford cars. No. 28H268 Timer, for late 1912 and 1913-1917 model Ford cars. Shpg. wt., about 14 oz. \$1.05

No. 28H268 No. 28H267 Milwaukee Timer, for 1910-11 and early 1912 model Ford cars. \$3.20

Bernus Ball Contact Timer. A high grade ball contact timer giving rapid, snappy contacts and very durable. Devised to continually engage fresh contact surfaces. Balls retain only slight oil film on surfaces. By shortening duration of contact less current is needed, leaving plenty for lighting headlights. Shipping weight, about 1 pound. No. 28H8200 Bernus Ball Contact Timer. Price..... \$1.55

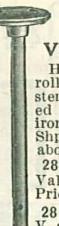
Goodrich Lock Switch. A positive ignition lock. Replaces regular ignition switch. Has individual Yale lock with two keys. When locked in off position switch cannot be removed, screws being concealed by metal shutters thrown over them by same turn of key that weight, about 8 ounces. \$2.75

Master Vibrator. Permits uniform firing in all cylinders without adjusting coil units separately. A standard efficient vibrator, adapted for either the Ford or standard type cars. Comes in hinged case with brass fittings, with full instructions for connecting and adjusting. Shipping wt., about 3 pounds. No. 28H11740 Master Vibrator. Price..... \$4.90

IGNITION OUTFIT. Low tension wires protected with cable insulation against grease, oil drippings, etc. Complete with terminals. Shipping weight, about 1 pound. No. 28H11712 Ignition Outfit, comprising Primary and Secondary Wiring Set. Price, complete. 75c

No. 28H12364 Secondary or Spark Plug Wiring Set. Shipping wt., about 6 oz. 25c

Regulette Lighting Switch. A four-point switch mounted on an enameled case containing a choke coil. Chokes alternating currents of electricity and prevents burning out of lamps by great rise of voltage at excessive engine speeds, due to failure of ignition, due to diverting too much current to lamps. Has no effect on lamps when car is running slowly. Directions for attaching. For use with 9-volt lighting systems use 6-volt bulbs to obtain better light at low engine speeds. Shipping weight, about 1½ pounds. No. 28H11735 Regulette Lighting Switch. Price..... \$1.60



Valve. Has cold rolled steel stem, polished cast iron head. Shpg. wt., about 5 oz. 28H11813 Valve. Price, 15c

28H12098 Valve Spring. Shpg. wt., abt. 3 oz. 3c

Price.....

Valve Stem Adjusters. Set comprises eight shells and about forty-eight discs. Hardened, durable shells. Discs designed for close adjustment. Shpg. wt., abt. 2 oz. No. 28H11861 Valve Stem Adjusters. Price, per set..... 20c

Price.....

Valve Grinder. Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4½ inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price..... 25c

Price.....

Valve Reseater. For reaming out valve seat when valve is badly pitted and imperfectly seated. Cutting surface made of hardened steel, balance of tool cold rolled steel. Has cutter complete with pilot. Shpg. wt., about 12 oz. No. 28H1253 Valve Reseater. Price, 40c

Price.....

Valve Grinder. Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4½ inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price..... 25c

Price.....

Valve Grinder. Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4½ inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price..... 25c

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Price.....

Valve Grinder. Applies quarter-circle power on valve top; two pins on grinder. Steel with wood top, about 4½ inches high. Shipping wt., about 10 oz. No. 28H11815 Valve Grinder. Price..... 25c

Price.....



Valve. Has cold rolled steel stem, polished cast iron head. Shpg. wt., about 5 oz. 28H11720 Valve. Price, 15c

28H11721 Valve. Price, 15c

Price.....

Oil Gauges. Shows constant oil level. Brass finish, well made; glass, ½ inch in diameter. Remove lower pet cock and replace with gauge. Shipping weight, about 5 ounces. No. 28H11720 Oil Gauge. Price..... 15c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....

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Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....



Oil Gauges. Shows constant oil level. Brass finish, well made; glass, ½ inch in diameter. Remove lower pet cock and replace with gauge. Shipping weight, about 5 ounces. No. 28H11720 Oil Gauge. Price..... 15c

28H11721 Oil Gauge. Price..... 15c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

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Price.....

Oil Gauge. Similar to above, with metal guard. Glass, ½ inch in diameter. Shipping weight, about 5 oz. Price..... 20c

Price.....



Sure-Tite Piston Rings. Made of close grain, tough gray iron. Badly worn piston rings cause loss of compression and power. Size, 3¾ x 1¼ inch only. Shipping weight, about 3 ounces. No. 28H11728 Sure-Tite Piston Rings. Price, each..... 9c

Felt Washers. Set of six felt washers, two each for rear wheel hub, 2510B, and front wheel hub, 2809. One each for crank-shaft, 3012, and steering bracket, 3544. Shipping weight, 3 ounces. No. 28H11890 Felt Washers per set..... 9c

Complete set of twenty felt washers and gaskets for Ford cars. Packed in box, including two each numbers 2510B, 2809, 3111,

3377 and 3451; one each of all the other felt gaskets, as shown in the illustration above. Weight, 5 ounces. No. 28H11891 Felt Washers per set..... 35c

Standard Piston Rings. Made of close grain, tough gray iron. Badly worn piston rings cause loss of compression and power. Size, 3¾ x 1¼ inch only. Shipping weight, about 3 ounces. No. 28H11728 Standard Piston Rings. Price, each..... 9c

Felt Washers. Set of six felt washers, two each for rear wheel hub, 2510B, and front wheel hub, 2809. One each for crank-shaft, 3012, and steering bracket, 3544. Shipping weight, 3 ounces. No. 28H11890 Felt Washers per set..... 9c

Complete set of twenty felt washers and gaskets for Ford cars. Packed in box, including two each numbers 2510B, 2809, 3111,

3377 and 3451; one each of all the other felt gaskets, as shown in the illustration above. Weight, 5 ounces. No. 28H11891 Felt Washers per set..... 35c

CIRCULATION.

Radiator Hose. Standard several ply steam hose with beveled ends in correct sizes. Outer hose, 2 inches inside diameter, 2½ inches long. Inlet hose, 1¾ inches inside diameter, 2¼ inches long. No. 28H11793 Radiator Hose. Shipping weight, about 7 ounces. Price, each..... 10c

Radiator Cap. An inexpensive radiator cap, hard rubber top. Shipping weight, 8 ounces. No. 28H11719 Radiator Cap. Price, each..... 24c

Fan Belts. A Spartan leather endless fan belt made of tough heat, oil and moisture resisting leather. Shipping weight, about 4 ounces. No. 28H11770 Fan Belt. For Ford cars up to 1916 models. Size, about 22¾ x 1¼ in. Price, each..... 32c

No. 28H11723 Fan Belt. For 1917 Ford cars. Size, about 26⅓ x 1¾ inches. Price, each..... 36c

Fabric Fan Belt. Shipping weight, about 4 oz. No. 28H11771 Fan Belt. For Ford cars up to 1916 models. Price, each..... 15c

No. 28H12544 Fan Belt. For 1917 Ford cars. Price, each..... 17c

WHEEL ACCESSORIES.

Hub Cap. No. 28H11737 Hub Cap. Standard hexagonal end brass cap. Shpg. wt., about 4 oz. Price, each..... 16c

Adjustable Wheel Pull. Standard type adjustable wheel pull, made of malleable iron. Adjustable feature makes removal of wheel much easier than using solid type wheel pull. Has large slot set screw. Shpg. wt., abt. 2 lbs. No. 28H11733 Wheel Pull. Without adjustable feature. Shpg. wt., abt. 2 lbs. Price, each..... 19c

No. 28H11734 Adjustable Wheel Pull. Price, each..... 29c

Dixon No. 680 Differential Graphite. For use in Ford car differential housings that leak at ends of axle.

No. 28H11712 2½-lb. cans. Shipping weight, 3½ pounds. Price, per can..... 75c

No. 28H11897 5-lb. cans. Shipping weight, 7 pounds. Price, per can..... \$1.30

Electric Lighting Outfit.

Outfit comprises two silver plated parabolic reflectors with bulbs removable from rear; equipped with Ediswan sockets, lighting switch, necessary electric connections and two 6-volt 12-candle power tungsten lamps with Ediswan fittings. System operates from the magneto. Use our Regulette Switch No. 28H11735 described at the left, to get the best results. Furnished in two sizes of reflectors.

No. 28H11707 Electric Lighting Outfit, 8-inch reflectors. Price..... \$3.28

No. 28H11708 Same as above, 9-inch reflectors. Price..... \$3.29

Shipping weight, either of above outfits, about 2½ pounds.

No. 28H6031 6-Volt, 12-Candle Power Tungsten Lamp, Ediswan base, for headlight use. Shipping weight, about 6 ounces. Price, each..... 20c

No. 28H6033 9-Volt, 18-Candle Power Tungsten Lamp, Ediswan base, for use with headlights used with 1915-1917 lighting system furnished with car. Shipping weight, about 6 ounces. Price, each..... 20c

NOTE—Measure door lens inside to get proper size reflector.

ILLUMINATION.

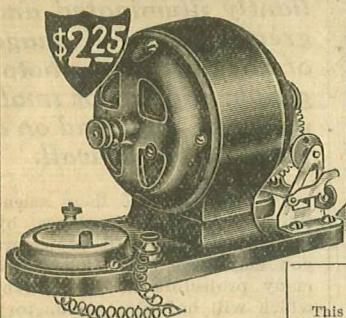
Regulette Lighting Switch. A four-point switch mounted on an enameled case containing a choke coil. Chokes alternating currents of electricity and prevents burning out of lamps by great rise of voltage at excessive engine speeds, due to failure of ignition, due to diverting too much current to lamps. Has no effect on lamps when car is running slowly. Directions for attaching. For use with 9-volt lighting systems use 6-volt bulbs to obtain better light at low engine speeds. Shipping weight, about 1½ pounds.

No. 28H11735 Regulette Lighting Switch. Price..... \$1.60

Ford Owners! In Our Big Catalog We Show a Full Line of Commercial Bodies for Ford Cars.

Boys! Ever run an electric motor?

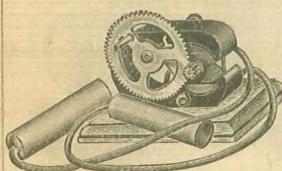
It's great sport — they run on dry batteries, and they "go like everything!"



Two-Speed Motor.

This motor is equipped with worm drive, reducing gear and start, stop and reverse switch. On a shaft is mounted a windlass for operating different mechanical devices. Small shift lever provided for throwing gear in and out of mesh. Motor measures 3 1/4 inches high and 4 1/4 inches over shaft. Mounted on metal base, 6 1/4 x 2 1/2 inches. Can be operated from three or four dry cells, storage battery or city current reduced by transformer. Shipping weight, 2 1/4 pounds.

No. 69H5928 Price.....\$2.25



Electric Thriller, 97c.

The Electric Thriller will create lots of fun and amusement. It gives a shock so strong as to make the strongest tremble, or so mild as not to injure a young child, the strength of the shock depending entirely upon the speed with which the handle is turned. It costs nothing to run and does not require a battery. Finished in bright red enamel with nickel plated trimmings, mounted on a neat wood baseboard. Shipping weight, 1 pound 5 ounces.

No. 69H5903 Price. 97c
complete, ready for use.....

Type S High Speed Battery Dynamo- Motor

\$4.45

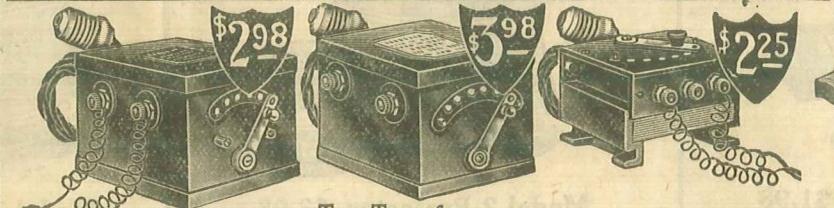
This Type S Dynamo-Motor is designed especially for experimental work in school laboratories as well as the home. The armature is made of steel laminations 1 1/4 inches in diameter with six slots, and the shaft is 1/4 inch in diameter. The windings are dipped in insulating varnish and baked to insure the best possible results. The pulley is 1 inch in diameter, grooved. The brush holder has rocker arms for adjusting the brushes.

Used as a dynamo, this machine, on open circuit, when run at 3,000 revolutions per minute, has an output of 9 volts. Under safe maximum load the output is 6 volts 4 amperes. As a dynamo, it may be used for electro plating, lighting miniature and electric lamps, operating electric motors, toy trolley cars and various other appliances. When used as a dynamo, this machine may be operated by the hand power described below, or by means of a 3/16-inch round belt it may be connected to a gas engine, a sewing machine or any other source of power. Height, 6 inches. Used as a motor, this machine is operated by batteries, giving excellent results on from 4 to 6 volts (three or four cells of series, two multiples). Shipping weight, 7 1/2 pounds.

No. 69H5919 Price, without battery.....

NOTE—This motor is not powerful enough to run sewing machines, washing machines, cream separators or machinery of this character.

Hand Power Machines, for operating the Type S Dynamo-Motor when used as a dynamo. Large gears drive dynamo at high speed with little effort. Substantial and nicely finished. Shipping wt., 4 lbs. \$2.25
No. 69H5920 Price.....



Toy Transformers.

For reducing ordinary city current to the proper strength necessary for operating toy motors, electric trains, etc. This is done by simply connecting the transformer direct to the lighting socket and regulating the voltage by means of the regulating switch, which in turn regulates the speed. Transformers are supplied with batteries because they are a great deal more economical and will last a long time. We offer here three different types representing different degrees of strength and quality for reducing alternating current only. These transformers are made of high quality material and come complete with cord and plug.

Our Medium Grade Transformer.

Has not as large a range as No. 69H5913, but is very efficient. Capacity, 50 watts. Has ten voltages, ranging from 2 to 20 volts in 2-volt steps. Size, 4 1/4 x 3 3/4 x 3 1/4 inches. Shipping weight, 6 pounds.

No. 69H5912 Price.....\$2.98
Price.....

Our Very Best.

Designed to do more work than either of the other two. Capacity, 75 watts. Has sixteen voltages, ranging from 1 1/2 to 24 volts in 1 1/2-volt steps. Size, 5 1/4 x 3 3/4 x 3 1/4 inches. Shipping weight, 8 pounds.

No. 69H5913 Price.....\$3.98
Price.....

Our Popular Priced Transformer.

Not as high a quality as either of the higher priced transformers but still strong enough to run any electric train or motor we list. Especially built to supply demand at popular price. Capacity, over 50 watts. Has eight voltages in 3-volt steps. Size, 3 1/4 x 3 3/4 x 2 1/2 inches. Shipping weight, 3 lbs.

No. 69H5936 Price.....\$2.25
Price.....

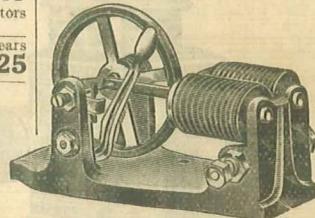
Buy This "One Mouse-Power" Motor.

For Tinker Toy Models and Other Small Toys.



Wonderful value in motor. Especially adapted to running construction toy outfit models. Price brings this motor within easy reach of everybody. One dry cell runs it. Mechanically and electrically perfect. Size, 2 1/4 x 1 1/2 in., mounted on strong wood base. Shipping wt., 7 oz.
No. 69H5938 Price.....33c

Toy Electric Engines, 50c to \$1.47.

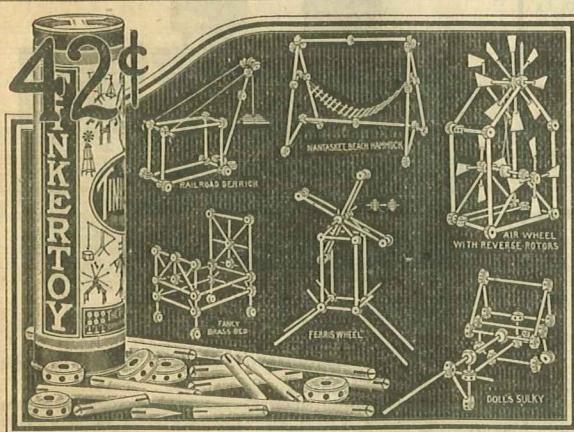


Electric Engine. Will run at a speed of from 300 to 1,000 revolutions per minute. The speed can be regulated by the controlling lever, which also starts, stops, or reverses the engine. Three sizes.

No. 69H5900 One-Battery. Size, 4 inches long, 2-inch flywheel. Shipping wt., 1 lb. 50c
Price.....

No. 69H5901 Two-Battery. Size, 5 1/4 inches long, 2 1/2-inch flywheel. Shipping wt., 1 1/2 lbs. 98c
Price.....

No. 69H5937 Three-Battery. Size, 7 inches long, 3 1/2-inch flywheel. Shipping wt., 3 lbs. \$1.47
Price.....

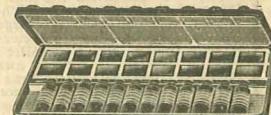


Tinker Toy-Wonder Builder.

Build, in a few minutes, most any top model. Tinker Toy consists of 70 to 75 pieces of white wooden sticks and spools with holes. Each stick is spring sawed on each end so it enters the hole in the spool tightly. The pieces are as thick as a lead pencil, very strong and sturdy. Shipping weight, 1 pound.

No. 49H4760 Price, per set.....42c

A Wonder Value.



A very popular size box. Contains sixteen dry colors, twelve tube colors, good paint brush. Size of box, 8x3 1/2 inches, with directions. A good practical set. Shipping weight, 11 ounces.

No. 49H3856 Price.....79c

This Paint Box, 17c.

Twenty-one colors, with brush. Metal box, size 3x8 inches. Shipping weight, 8 ounces.

No. 49H3854 Price.....17c

Four Tops for 13c.

Rubber cushion, frictionless, fancy striped and red, white and blue tops, 2 1/2 inches high. Complete with cord. Shipping weight, 10 ounces.

No. 69H7771 Price.....13c

Cut-Out Map of the United States.



This is an educational toy that every parent should buy. Teaches the child geography and many facts it would otherwise take years to learn.

The maps are very accurate and show the state boundaries. A most interesting and instructive amusement. Size, 20x12 inches. States cut at border lines. Made from 3-ply veneer wood to prevent warping, and packed in fancy box. Shipping weight, 1 1/2 pounds.

No. 49H3861 Price.....42c

Our Biggest Registering Bank Value.

Registers pennies, nickels, dimes and quarters. It is made of strong sheet steel, attractively decorated. Opens automatically when a total of \$10.00 is deposited. Size, 7x4x6 3/4 inches. Shipping weight, 2 1/2 pounds.

No. 69H8729 Price, \$1.19
each.....



If Parcel Post Shipment Include Amount of Charges Extra. See Page 766.

SEARS, ROEBUCK AND CO., 239
CHICAGO, ILL.

Post Card Projectors

No Glass Slides
Necessary
Uses Any Kind of
Picture
Pleases the Whole
Family

THE PICTURES ON THE SCREEN are large, brilliant and clearly defined, just like stereopticon or magic lantern views, but the expensive glass slides which are necessary with the old style magic lantern are not required. These projectors use any photograph or post card, any picture cut from a magazine or newspaper, your own drawings, or any small flat object, such as a butterfly, a leaf, a pressed flower or a watch, and the object or picture is accurately projected on to the screen greatly enlarged, sharp and clear in all its details and in all its own natural colors.

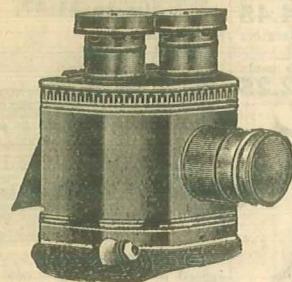
THE REMARKABLY GOOD RESULTS obtained with these machines are largely due to the optically perfect parabolic reflectors together with a more scientific adjustment of reflectors and light. We guarantee more illumination with these projectors than is possible with any other projector on the market. The great illumination, in combination with the specially ground double lenses and curved picture holders, results in larger, brighter and sharper images on the screen than we believe is possible with any other machine.



THE MODERN
MAGIC LANTERNS

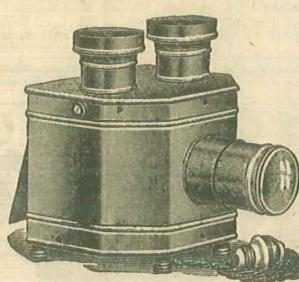
Very simple and easily operated instruments which project a brilliantly illuminated and greatly enlarged image of any post card, photograph, clipping or small object of any kind on a white screen or wall.

DO NOT JUDGE these scientifically designed machines by any other post card projectors you may have seen. There are many projectors on the market which will not give satisfactory results, but our projectors are made right in every way. Every detail of design and construction has had the painstaking attention of experts in projection apparatus.



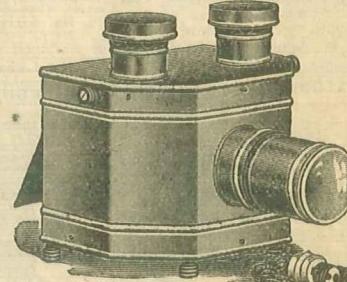
Model 1 Projector, \$1.98

Size of machine, 9 inches wide, 10 inches high.
Finish. Glossy red enamel, handsomely decorated in white gilt and black.
Single lens, $2\frac{1}{2}$ inches in diameter.
Detachable back, with curved picture holder, not reversible.
Takes $3\frac{1}{4} \times 5\frac{1}{4}$ -inch cards horizontally.
Multiplane reflectors.
Size of picture, 4 feet across at 8 feet from screen.
No. 20H2884 For Electricity, 105-115 Volts. Shipping weight, 4 pounds 1 ounce. Price.....\$1.98
No. 20H2885 For Acetylene Gas. Shipping weight, $4\frac{1}{4}$ pounds. Price.....\$1.98
No. 20H2886 For Artificial Gas. Shipping weight, $3\frac{3}{4}$ pounds. Price.....\$1.98



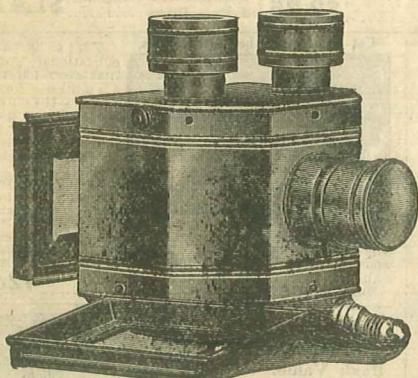
Model 2 Projector, \$3.98

Size of machine, $9\frac{1}{2}$ inches wide, $10\frac{1}{4}$ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, $2\frac{1}{2}$ inches in diameter.
Hinged back, with curved revolving picture holder for either horizontal or vertical cards, $3\frac{1}{2} \times 5\frac{1}{2}$ inches.
Parabolic reflectors, 6 inches in diameter.
Size of picture, $4\frac{1}{2}$ feet across at 9 feet from screen.
No. 20H2887 For Electricity, 105-115 Volts. Shipping weight, 5 $\frac{1}{2}$ pounds. Price.....\$3.98
No. 20H2888 For Acetylene Gas. Shipping weight, 7 pounds. Price.....\$3.98
No. 20H2889 For Artificial Gas. Shipping weight, $6\frac{1}{4}$ pounds. Price.....\$3.98



Model 3 Projector, \$5.98

Size of machine, $11\frac{1}{4}$ inches wide, $10\frac{1}{4}$ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, $3\frac{1}{2}$ inches in diameter.
Hinged back, with curved revolving picture holder for either horizontal or vertical cards, $3\frac{1}{2} \times 5\frac{1}{2}$ inches.
Parabolic reflectors, $7\frac{1}{2}$ inches in diameter.
Size of picture, $5\frac{1}{2}$ feet across at 11 feet from screen.
No. 20H2890 For Electricity, 105-115 Volts. Shipping weight, 7 $\frac{1}{4}$ pounds. Price.....\$5.98
No. 20H2891 For Acetylene Gas. Shipping weight, $10\frac{1}{2}$ pounds. Price.....\$5.98
No. 20H2892 For Artificial Gas. Shipping weight, 9 pounds. Price.....\$5.98



Model 4 Projector, \$7.98

Size of machine, $11\frac{3}{4}$ inches wide, $13\frac{1}{4}$ inches high.
Finish. Polished oxidized copper plate with bright copper bands.
Double lens, $3\frac{1}{2}$ inches in diameter.
Two detachable sliding backs with adjustable curved revolving picture holders, which take any size of picture from $3\frac{1}{4} \times 6\frac{1}{2}$ up to $5\frac{1}{2} \times 7\frac{1}{2}$ inches.

Parabolic reflectors, $7\frac{1}{2}$ inches in diameter.
Size of picture, $6\frac{1}{2}$ feet across at 12 feet from screen.
No. 20H2893 For Electricity, 105-115 Volts. Shipping weight, $10\frac{1}{2}$ pounds. Price.....\$7.98
No. 20H2894 For Acetylene Gas. Shipping weight, $12\frac{1}{2}$ pounds. Price.....\$7.98
No. 20H2895 For Artificial Gas. Shipping weight, $11\frac{1}{2}$ pounds. Price.....\$7.98

Size of Pictures on Screen

The size of picture thrown on the screen by our projectors depends upon the distance of the projector from the screen. The greater the distance the larger the picture will be. Moving the projector closer to the screen results in a smaller but brighter picture; moving it farther away produces a larger but less brilliant picture. The distance at which the most satisfactory results are obtained is largely a matter of personal opinion. In our descriptions we state the size of picture at the distance which we consider most satisfactory.

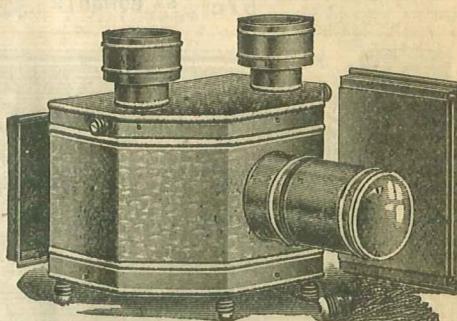
About the Light

When comparing prices kindly note that all our electric models are equipped with two high candle power incandescent electric lamps, 6 feet of double conductor electric cord, and socket for attaching to any electric light fixture. Unless otherwise requested we always send lamps suitable for 105 to 115 volt current.

Acetylene gas models are equipped with two high candle power acetylene gas burners, a large generator and connections. Carbide is not included, owing to insurance regulations which prevent us from carrying it in stock. It is easily obtained at any place where bicycle or automobile supplies are sold, or at hardware or drug stores.

Artificial gas models are equipped with two high candle power gas burners with mantles, 6 feet of special gas tubing, and connections for attaching to any gas fixture.

We recommend electric light or artificial gas where it can be used, because it is a little handier than acetylene gas, but acetylene gas gives just as good a picture as electric light or artificial gas. With our improved generator, which is guaranteed to be safe, it is only necessary to put in a little carbide, pour in a little water, and the projector is ready to light immediately.



Model 5 Projector, \$11.98

Size of machine, 13 inches wide, $14\frac{1}{2}$ inches high.
Finish. Polished oxidized copper plate, hand curled, with bright copper bands.
Double lens, $3\frac{1}{2}$ inches in diameter.
Two sliding backs with adjustable self centering revolving picture holders, taking any size of picture from $3\frac{1}{4} \times 7\frac{1}{2}$ up to $5\frac{1}{2} \times 7\frac{1}{2}$ inches.
Parabolic reflectors, $8\frac{1}{2}$ inches in diameter.
Size of picture, 7 feet across at 18 feet from screen.
No. 20H2896 For Electricity, 105-115 Volts. Shipping weight, 13 pounds. Price.....\$11.98
No. 20H2897 For Acetylene Gas. Shipping weight, $11\frac{1}{2}$ pounds. Price.....\$11.98

NOTE—Models 4 and 5 are provided with two backs. While one is in position the other can be loaded, sliding smoothly into position as the first one is removed, so that one picture follows another without the undesirable interval of a blank and brilliantly lighted screen between pictures.

FREIGHT RATES

Tables Showing the Freight Rates per 100 Pounds on Goods Shipped From Chicago to a Number of Cities in Each State, These Cities Being Used by the Railroads as a Basis for Figuring Rates for All the Towns in the Immediate Vicinity of Each City.

RAILROAD COMPANIES FIGURE FREIGHT RATES WITH THE LARGER CITIES IN EACH STATE AS A BASIS. All other towns located in the same part of the state as any one of these cities take practically the same rate or only a few cents per 100 pounds more or less than the rate to the larger city.

Please consult the following Table of Rates, considering it in connection with the classification of merchandise, and you will be able to determine easily, almost exactly, what the freight will amount to on any goods. If your station is not named in these tables, the rate to

your station will be very nearly the same as the rate to the nearest city named, or you may ask your freight agent.

HOW TO SAVE ON FREIGHT CHARGES. In having goods shipped by freight, it pays you to make up an order of 100 pounds or more, because railroad companies usually charge as much for a shipment weighing less than 100 pounds as they do for one weighing 100 pounds.

WHEN YOU LEAVE THE METHOD OF SHIPMENT TO US WE ALWAYS CHOOSE THE CHEAPEST METHOD.

CLASSIFICATION OF MERCHANDISE FOR FREIGHT SHIPMENTS.

You will notice in the Freight Rate Tables below there are four different rates quoted to each city, first class, second class, third class and fourth class. This is because the railroad companies base their rates on the kind of merchandise to be carried. In order, therefore, to give you an idea as to the rate which any kind of merchandise will take to your nearest city, we tell you here the kind of merchandise which takes the different classes of rates.

FOUR TIMES FIRST CLASS		FIRST CLASS		FIRST CLASS		FIRST CLASS		SECOND CLASS		THIRD CLASS	
Row Boats	Awnings	Baby Carriages (South)	Harness and Saddlery	Horse Clipping Machines	(South)	Wagons Farm (East and West)	Loaded Gun Shells (West and East)	Iron Pots and Kettles	Iron Safes	Oils (West and South)	Paints (East)
DOUBLE FIRST CLASS	Bathtubs	Buggies (54-in. crates) (East)	Bird Sleds	Incubators	Ladders (West and South)	Wagon Wheels (East and West)	Oilcloth	Oils (East)	Oil Stoves (South)	Stoves and Ranges (Cast Iron)	Stamp Pullers (East R25)
Buggies (54-in. crates) (East)	Books	Cameras (West)	Boots and Shoes	Lamps	Loaded Gun Shells (South)	Washing Machines	Pulleys	Tools (East)	Pulleys	Windmills (East R25)	Wire Fencing (East R26)
Dress Forms	Brooders	Road Carts	Buggies (34-in. crates) (South)	Matting	Matting	Animal Traps	Refrigerators	Vises (East R26)	Vises (East R26)	Windmills (East R25)	Wire Fencing (East R26)
Road Carts	Buggies (34-in. crates) (South)	Sleds, Children's (West)	Cameras (East and South)	Milk Cans (West and South)	Morris Chairs	Bedsteads	Sewing Machines (South)	Anvils	Concrete Block Machines (South)	Crockery (South)	Grindstones with Frames (South)
Sleds, Children's (West)	Carpets	Buggies (34-in. crates) (East)	Camera Supplies	Oil Stoves (East and West)	Notions	Concrete Block Machines (West)	Tools (West and South)	Paints (West and South)	Crockery (South)	Grindstones with Frames (South)	Grindstones with Frames (South)
1½ TIMES FIRST CLASS	Chinaware	Buggies (54-in. crates) (West and South)	Cigars	Plano's and Organs	Pictures	Cream Separators	Vacuum Cleaners	Poultry Food	Prepared Roofing (East R26)	Stock Food	Wagon Wheels (South)
Baby Carriages (East and West)	Clothing	Buggies (54-in. crates) (West and South)	Clocks	Rubber Goods	Toys	Crockery (West)	Wagons, Children's (West)	Farm Implements (East R25)	Steel Roofing	Wagons, Farm (South)	Wire, Plain or Barbed
Bicycles	Couches	Buggies (54-in. crates) (West and South)	Couches	Rugs	Trunks (West and South)	Extension Tables	Gasoline Engines (South)	Steel Sidings	Stock Food	Wagon Wheels (South)	Wire, Plain or Barbed
Buggies (34-in. crates) (East and West)	Curtains	Desks (East)	Desks (West and South)	Sewing Machines (West and East)	Vallies	Horse Clipping Machines (West and East)	Forges (East and South)	Grindstones with Frame (East R26)	Wagons, Farm (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Buggies (54-in. crates) (West and South)	Dresses	Motorcycles	Desks (West and South)	Spinning Goods	Wagons, Children's (East and South)	Ladders (East)	Gasoline Engines (East)	Grindstones with Frame (East R26)	Wagon Wheels (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Desks (East)	Drugs	Sleds, Children's (East and South)	Dresses	Stationery	Shrevesport	Linoleum	Glassware (East R25)	Hand Pumps (East R25)	Wagons, Farm (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Milk Cans (East)	Electrical Goods	Trunks (East)	Drugs	Tents			Graniteware	Hardware (East R26)	Wagon Wheels (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Motorcycles	Fire Arms	Trunks (East)	Forces (West)	Trunks (West and South)			Grindstones with Frame (West)	Hand Pumps (East R25)	Wagons, Farm (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Sleds, Children's (East and South)	Forces (West)	Trunks (West and South)	Gasoline Engines (West)	Vallies			Hardware (West and South)	Hardware (East R26)	Wagon Wheels (South)	Wagon Wheels (South)	Wire, Plain or Barbed
Trunks (East)	Graphophones	Wagons, Children's (East and South)	Graphophones				Horse Clipping Machines (West and East)	Hand Pumps (East R25)	Wagons, Farm (South)	Wagon Wheels (South)	Wire, Plain or Barbed

HERE ARE THE RATES PER 100 POUNDS TO DIFFERENT TOWNS IN EACH STATE.

From Chicago to	1st Class Freight, per 100 Pounds.	2d Class Freight, per 100 Pounds.	3d Class Freight, per 100 Pounds.	4th Class Freight, per 100 Pounds.	From Chicago to	1st Class Freight, per 100 Pounds.	2d Class Freight, per 100 Pounds.	3d Class Freight, per 100 Pounds.	4th Class Freight, per 100 Pounds.	From Chicago to	1st Class Freight, per 100 Pounds.	2d Class Freight, per 100 Pounds.	3d Class Freight, per 100 Pounds.	4th Class Freight, per 100 Pounds.
ALABAMA—					KENTUCKY—					NORTH DAKOTA—				
Birmingham	\$1.32	\$1.12	\$0.93	\$0.75	Frankfort	\$0.63	\$0.54	\$0.42	\$0.32	Bismarck	\$1.60	\$1.35	\$1.07	\$0.76
Brewton	1.48	1.22	1.00	.82	Hopkinsville	.80	.65	.55	.46	Fargo	1.17	.99	.77	.54
Mobile	1.10	.90	.75	.58	Louisville	.43	.37	.27	.19	Grand Forks	1.24	1.04	.83	.58
Montgomery	1.33	1.17	1.00	.77	Morehead	.81	.68	.53	.37	Minot	1.75	1.49	1.20	.87
ARIZONA—					LOUISIANA—					Williston	1.99	1.66	1.36	.99
Phoenix	2.90	2.51	2.09	1.75	Lake Charles	1.60	1.34	1.10	.93	OHIO—				
Tucson	2.90	2.51	2.09	1.75	New Orleans	1.10	.90	.75	.58	Cincinnati	.42	.36	.26	.18
					Shreveport	1.45	1.24	1.07	.88	Columbus	.43	.37	.27	.19
ARKANSAS—					MAINE—					Toledo	.39	.34	.25	.17
Arkansas City	1.20	1.01	.77	.59	Bangor	.86	.74	.58	.41	OKLAHOMA—				
Fort Smith	1.30	1.11	.87	.69	Maryland	.76	.65	.50	.34	Oklahoma City	1.50	1.29	1.07	.87
Hot Springs	1.55	1.32	1.05	.81	Baltimore	.39	.34	.25	.17	OREGON—				
Little Rock	1.20	1.01	.77	.59	Massachusetts	.86	.74	.58	.41	Portland	3.40	2.95	2.45	2.07
Texarkana	1.47	1.27	1.08	.96	MAINE—					PENNSYLVANIA—				
CALIFORNIA—					MICHIGAN—					Harrisburg	.76	.65	.50	.34
Bakersfield	3.40	2.95	2.45	2.07	Bessemer	.65	.55	.44	.28	Philadelphia	.77	.66	.51	.35
Los Angeles	3.40	2.95	2.45	2.07	Detroit	.39	.34	.25	.17	Pittsburgh	.47	.41	.32	.22
San Francisco	3.40	2.95	2.45	2.07	Grand Rapids	.35	.30	.23	.16	RHODE ISLAND—				
COLORADO—					Traverse City	.52	.44	.34	.25	Providence	.86	.74	.58	.41
Denver	1.80	1.45	1.10	.85	MINNESOTA—					SOUTH CAROLINA—				
Durango	3.20	2.70	2.15	1.60	Aitkin	.93	.78	.62	.42	Charleston	1.30	1.10	.97	.85
Grand Junction	2.65	2.23	1.85	1.49	Crookston	1.19	.99	.79	.55	Greenville	1.40	1.24	1.06	.83
Julesburg	1.68	1.41	1.07	.85	Duluth	.65	.55	.44	.28	Sumter	1.42	1.24	1.06	.83
Leadville	2.65	2.23	1.85	1.49	Grand Rapids	.98	.82	.66	.44	SOUTH DAKOTA—				
CONNECTICUT—					Minneapolis	.60	.50	.40	.25	Aberdeen	1.14	.95	.76	.50
Hartford	.86	.74	.58	.41	Winona	.50	.42	.33	.23	Belle Fourche	1.94	1.62	1.35	1.10
DELAWARE—					Hattiesburg	1.29	1.09	.93	.78	Sioux Falls	.83	.68	.47	.34
Dover	.79	.68	.53	.37	Jackson	1.26	1.06	.90	.76	Watertown	.96	.82	.64	.45
DIST. OF COLUMBIA—					Natchez	1.10	.90	.75	.58	TENNESSEE—				
Washington	.76	.65	.50	.34	MISSOURI—					Jackson	1.06	.87	.71	.53
FLORIDA—					Kansas City	.80	.65	.45	.32	Knoxville	1.11	.95	.79	.62
Jacksonville	1.30	1.10	.97	.85	St. Louis	.46	.37	.29	.23	Memphis	.85	.65	.55	.43
Miami	2.27	1.97	1.74	1.55	Springfield	.82	.72	.50	.37	Nashville	.82	.68	.53	.43
Pensacola	1.10	.90	.75	.58	MONTANA—					TEXAS—				
Tallahassee	1.82	1.57	1.35	1.08	Billings	2.50	2.09	1.69	1.36	El Paso	2.20	1.86	1.52	1.30
Tampa	1.80	1.53	1.31	1.17	Glasgow	2.25	1.92	1.55	1.18	Fort Worth	1.67	1.41	1.16	1.06
GEORGIA—					Havre	2.50	2.14	1.74	1.36	Houston	1.67	1.41	1.16	1.06
Atlanta	1.42	1.22	1.03	.83	Heleena	2.65	2.26	1.85	1.49	UTAH—				
Macon	1.42	1.22	1.03	.83	Kalispell	2.75	2.35	1.93	1.57	Marysville	3.15	2.71	2.31	1.93
Savannah	1.30	1.10	.97	.85	Miles City	2.25	1.92	1.55	1.18	Salt Lake City	2.65	2.23	1.85	1.49
Waycross	1.70	1.46	1.29	1.07	NEBRASKA—					VERMONT—				
IDAHO—					Lincoln	.85	.70	.49	.36	Montpelier	.86	.74	.58	.41
Boise	2.81	2.41	2.00	1.65	North Platte	1.46	1.30	.99	.78	VIRGINIA—				
Pocatello	2.65	2.23	1.85	1.49	Omaha	.80	.65	.45	.32	Marion	.88	.75	.58	.40
ILLINOIS—					NEVADA—					Richmond	.76	.65	.50	.34
Cairo	.47	.38	.31	.24	Austin	3.65	3.28	2.89	2.41	Rocky Mount	1.03	.86	.67	.48
Joliet	.21	.17	.15	.14	Carson City	3.15	2.76	2.34	2.00	WASHINGTON—				
Rock Island	.38	.30	.23	.19	Concord	.86	.74	.58	.41	Seattle	3.40	2.95	2.45	2.07
Springfield	.39	.31	.24	.20	NEW JERSEY—					Spokane	2.90	2.51	2.09	1.75
INDIANA—					Atlantic City	.84	.73	.58	.42	WEST VIRGINIA—				
Evansville	.42	.36	.26	.18	Trenton	.79	.68	.53	.37	Charleston	.47	.41	.32	.22
Fort Wayne	.30	.26	.21	.14	NEW MEXICO—					Elkins	.63	.55	.42	.29
Indianapolis	.33	.28	.23	.15	Gallup	2.90	2.51	2.09	1.75	Wheeling	.47	.41	.32	.22
Richmond	.38	.33	.24	.17	Santa Fe	2.20	1.86	1.50	1.25	WISCONSIN—				
South Bend	.23	.21	.18	.14	Silver City	2.60	2.21	1.82	1.56	Ashland	.65	.55	.44	.28
IOWA—					NEW YORK—					La Crosse	.50	.42	.33	.23
Des Moines	.60	.48	.36	.27	Albany	.76	.66	.50	.35	Madison	.39	.34	.26	.18
Fort Dodge	.65	.52	.39	.29	Buffalo	.47	.41	.32	.22	Marinette	.43	.36	.29	.23
Sioux City	.80	.65	.45	.32	Syracuse	.63	.55	.42	.29	Milwaukee	.25	.20	.15	.14
KANSAS—					Raleigh	1.17	1.01	.78	.56	WYOMING—				
Dodge City	1.62	1.39	1.08	.83	Wilmington	1.17	.98	.75	.56	Cheyenne	1.80	1.45	1.10	.85
Great Bend	1.45	1.22	.95	.77					Green River	2.55	2.15	1.78	1.43	
Kansas City	.80	.65	.45	.32					Lander	2.80	2.33	1.85	1.48	
Topeka	1.00	.82	.59	.43					Sheridan	2.50	2.09	1.69	1.36	
Wichita	1.30	1.11	.86	.65										

Rates for Parcel Post Shipments

Your postmaster will tell you the parcel post zone in which your postoffice is located, measuring from Chicago

All merchandise shipped by mail takes parcel post rates. Packages up to 4 ounces in weight are carried at the rate of 1 cent an ounce, regardless of distance. Packages over 4 ounces are charged for by the pound. The rate per pound varies according to the distance, which is measured by the Government zone system, each zone covering a certain number

of miles from point of shipment. Distances and rates are shown in the table below. Packages carried by parcel post are handled just like any other mail matter. They are delivered to your box by your rural mail carrier if you live on a rural route, or delivered to your door if you live in a city where there is carrier service, or delivered to your local postoffice if you live where there is no carrier service.

RATE TABLE FOR PARCEL POST SHIPMENTS

Weight of Package	LOCAL ZONE		ZONES 1 AND 2		ZONE 3		ZONE 4		ZONE 5		ZONE 6		ZONE 7		ZONE 8	
	For Shipments From Our Store in Chicago to Customers Within Chicago		Not Over 150 Miles From CHICAGO	151 to 300 Miles From CHICAGO	301 to 600 Miles From CHICAGO	601 to 1,000 Miles From CHICAGO	1,001 to 1,400 Miles From CHICAGO	1,401 to 1,800 Miles From CHICAGO	Over 1,800 Miles From CHICAGO	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required	Charges Required
Over 4 oz. up to 1 lb....	5c	5c	6c	7c	\$0.08	\$0.09	\$0.11	\$0.12								
Over 1 lb. up to 2 lbs....	6c	6c	8c	11c	.14	.17	.21	.24								
Over 2 lbs. up to 3 lbs....	6c	7c	10c	15c	.20	.25	.31	.36								
Over 3 lbs. up to 4 lbs....	7c	8c	12c	19c	.26	.33	.41	.48								
Over 4 lbs. up to 5 lbs....	7c	9c	14c	23c	.32	.41	.51	.60								
Over 5 lbs. up to 6 lbs....	8c	10c	16c	27c	.38	.49	.61	.72								
Over 6 lbs. up to 7 lbs....	8c	11c	18c	31c	.44	.57	.71	.84								
Over 7 lbs. up to 8 lbs....	9c	12c	20c	35c	.50	.65	.81	.96								
Over 8 lbs. up to 9 lbs....	9c	13c	22c	39c	.56	.73	.91	1.08								
Over 9 lbs. up to 10 lbs....	10c	14c	24c	43c	.62	.81	1.01	1.20								
Over 10 lbs. up to 11 lbs....	10c	15c	26c	47c	.68	.89	1.11	1.32								
Over 11 lbs. up to 12 lbs....	11c	16c	28c	51c	.74	.97	1.21	1.44								
Over 12 lbs. up to 13 lbs....	11c	17c	30c	55c	.80	1.05	1.31	1.56								
Over 13 lbs. up to 14 lbs....	12c	18c	32c	59c	.86	1.13	1.41	1.68								
Over 14 lbs. up to 15 lbs....	12c	19c	34c	63c	.92	1.21	1.51	1.80								
Over 15 lbs. up to 16 lbs....	13c	20c	36c	67c	.98	1.29	1.61	1.92								
Over 16 lbs. up to 17 lbs....	13c	21c	38c	71c	1.04	1.37	1.71	2.04								
Over 17 lbs. up to 18 lbs....	14c	22c	40c	75c	1.10	1.45	1.81	2.16								
Over 18 lbs. up to 19 lbs....	14c	23c	42c	79c	1.16	1.53	1.91	2.28								
Over 19 lbs. up to 20 lbs....	15c	24c	44c	83c	1.22	1.61	2.01	2.40								
Over 20 lbs. up to 21 lbs....	15c	25c														
Over 21 lbs. up to 22 lbs....	16c	26c														
Over 22 lbs. up to 23 lbs....	16c	27c														
Over 23 lbs. up to 24 lbs....	17c	28c														
Over 24 lbs. up to 25 lbs....	17c	29c														
Over 25 lbs. up to 26 lbs....	18c	30c														
Over 26 lbs. up to 27 lbs....	18c	31c														
Over 27 lbs. up to 28 lbs....	19c	32c														
Over 28 lbs. up to 29 lbs....	19c	33c														
Over 29 lbs. up to 30 lbs....	20c	34c														
Over 30 lbs. up to 31 lbs....	20c	35c														
Over 31 lbs. up to 32 lbs....	21c	36c														
Over 32 lbs. up to 33 lbs....	21c	37c														
Over 33 lbs. up to 34 lbs....	22c	38c														
Over 34 lbs. up to 35 lbs....	22c	39c														
Over 35 lbs. up to 36 lbs....	23c	40c														
Over 36 lbs. up to 37 lbs....	23c	41c														
Over 37 lbs. up to 38 lbs....	24c	42c														
Over 38 lbs. up to 39 lbs....	24c	43c														
Over 39 lbs. up to 40 lbs....	25c	44c														
Over 40 lbs. up to 41 lbs....	25c	45c														
Over 41 lbs. up to 42 lbs....	26c	46c														
Over 42 lbs. up to 43 lbs....	26c	47c														
Over 43 lbs. up to 44 lbs....	27c	48c														
Over 44 lbs. up to 45 lbs....	27c	49c														
Over 45 lbs. up to 46 lbs....	28c	50c														
Over 46 lbs. up to 47 lbs....	28c	51c														
Over 47 lbs. up to 48 lbs....	29c	52c														
Over 48 lbs. up to 49 lbs....	29c	53c														
Over 49 lbs. up to 50 lbs....	30c	54c														

Within Local Zone and Zones 1 and 2 packages up to 50 pounds in weight are carried. The limit of weight for all other zones is 20 pounds. Articles measuring more than 7 feet in length and girth combined cannot be shipped by parcel post.

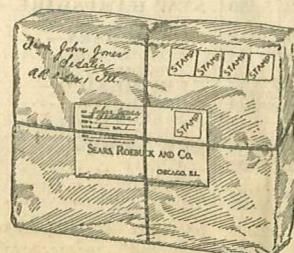
It is not necessary to send stamps to pay the postage for shipping package; simply include the amount for charges in the money order, check or currency you send us. This charge for mailing must be paid in advance as the Government has not provided for the collection of mailing charge on delivery. If in doubt as to what amount is required for any order you are perfectly safe in adding even more than you think necessary, for we will ship by the most economical method and will return you any amount that is left over.

Throughout our catalogs you will find the shipping weight is given in the description of merchandise. Occasionally, according to the nature of the merchandise, we are obliged to give the actual weight. In such cases a few ounces extra in weight must be allowed for wrapping and packing, according to the nature of the goods.

Books. Parcel post rates apply to books as follows:

All books up to and including 8 ounces in weight will be carried at the rate of 1 cent for 2 ounces to any part of the United States, regardless of distance, and all books over 8 ounces in weight will take the regular parcel post rates according to weight and zone.

How to Return Goods to Us by Parcel Post



The Way to Return Goods to Us by Parcel Post.

When you return goods by parcel post, put the letter you write and the bills for the goods (if you have the bills) in an envelope and paste or tie the envelope securely to the outside of the package. In addition to the postage you put on the package, put a 2-cent stamp on the envelope.

EXPRESS RATES

Tables Showing the Express Rates per 100 Pounds on Goods Shipped From Chicago to a Number of Cities in Each State, These Cities Being Used as a Basis for Figuring Rates for All the Towns in the Immediate Vicinity of Each City. Your Express Agent Will Tell You the Exact Rates From Chicago to Your Home Town and Give You Full Information in Reference to Their Delivery Service.

HOW TO FIGURE EXPRESS CHARGES

First estimate the weight of goods you are ordering; then find the rate per 100 pounds by express to your nearest city in the Table of Rates below; then consult the Scale of Express Charges, following the line for the weight of your goods to the column headed by your express rate per 100 pounds, and the amount shown will be the express charges.

If the exact rate per 100 pounds is not shown in any of the headings of this scale, take the next highest rate shown and the express charges will be about the same as to your town.

EXPRESS RATES PER 100 POUNDS TO CITIES IN EACH STATE.

From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.	From Chicago to	Express, per 100 Pounds.
ALABAMA—		GEORGIA—		MARYLAND—		NEW JERSEY—		SOUTH DAKOTA—		TEXAS—	
Birmingham	\$2.40	Atlanta	\$2.60	Baltimore	\$2.25	Atlantic City	\$2.40	Aberdeen	\$3.15	Paso	5.95
Brewton	2.85	Macon	2.85	Trenton	2.40	Bellefonte	3.80	Bellefonte	3.80	Houston	3.85
Mobile	2.95	Savannah	3.20	Boston	2.50	Santa Fe	4.75	Sioux Falls	2.45	Memphis	2.10
Montgomery	2.60	Waycross	3.15	Bessemer	2.25	Silver City	6.50	Watertown	2.75	Nashville	1.75
ARIZONA—		IDAHO—		DETROIT—		GALLUP—		JACKSON—		HOUSTON—	
Phoenix	8.00	Bolse	7.85	Detroit	1.25	Santa Fe	6.25	Jackson	1.05	Pasco	4.10
Tucson	7.15	Pocatello	7.00	Grand Rapids	1.00	Albany	2.30	Knoxville	2.40	Fort Worth	3.85
ARKANSAS—		ILLINOIS—		Traverse City	1.60	Buffalo	1.80	Memphis	2.10	Houston	3.85
Arkansas City	2.50	Cairo	1.50	Grand Rapids	2.40	Syracuse	2.00	Nashville	1.75	Texarkana	1.75
Fort Smith	2.90	Joliet .....	.60	Minneapolis	2.75	Raleigh	2.95	UTAH—		TEXAS—	
Hot Springs	2.90	Rock Island	1.00	Winona	2.00	Wilmington	3.20	Marysville	7.30	Paso	5.95
Little Rock	2.65	Springfield	1.15	MISSISSIPPI—	1.70	NEW YORK—		Salt Lake City	6.60	Fort Worth	3.85
Texarkana	3.15	INDIANA—		Hattiesburg	2.75	Albany	2.30	Montpelier	2.50	Houston	3.85
CALIFORNIA—		Evansville	1.25	Jackson	2.65	Buffalo	1.80	Marion	2.45	Texarkana	1.75
Bakersfield	8.90	Fort Wayne	1.00	Natchez	2.90	New York	2.40	Richmond	2.60	El Paso	5.95
Los Angeles	8.90	Indianapolis	1.00	MISSOURI—		Syracuse	2.00	Rocky Mount	2.60	Houston	3.85
San Francisco	9.30	Richmond	1.25	KANSAS—		Raleigh	2.95	Seattle	8.60	El Paso	5.95
COLORADO—		South Bend .....	.75	Des Moines	1.80	Wilmington	3.20	Spokane	7.75	Houston	3.85
Denver	4.20	MISSOURI—		Fort Dodge	1.95	NEW JERSEY—		WASHINGTON—		El Paso	5.95
Durango	5.90	Kansas City	2.45	Kansas City	2.10	Atlantic City	\$2.40	Charleston	1.85	Houston	3.85
Grand Junction	5.50	St. Louis	3.55	St. Louis	1.40	Trenton	2.40	Elkins	2.20	El Paso	5.95
Julesburg	3.70	SPRINGFIELD		Billings	5.40	Grand Forks	3.25	Wheeling	1.60	Houston	3.85
Leadville	5.00	Great Bend	3.15	Glasgow	4.75	Minot	3.80	Portland	8.85	El Paso	5.95
CONNECTICUT—		Kansas City	2.10	Havre	5.55	Williston	4.10	PENNSYLVANIA—		Houston	3.85
Hartford	2.55	Topeka	2.25	Helena	6.55	Oklahoma City	3.45	Harrisburg	2.15	El Paso	5.95
DELAWARE—		Wichita	3.15	Kalispell	6.80	Portland	8.85	Philadelphia	2.30	Houston	3.85
Dover	2.30	KENTUCKY—		Miles City	4.70	NEBRASKA—		Pittsburgh	1.70	Charleston	1.85
DISTRICT OF COLUMBIA—		Frankfort	1.40	NEBRASKA—		Oklahoma City	3.45	Providence	2.55	Elkins	2.20
Washington	2.25	Hopkinsville	1.60	Lincoln	2.45	RHODE ISLAND—		Providence	2.55	Wheeling	1.60
FLORIDA—		Louisville	1.25	North Platte	3.40	LOUISIANA—		WYOMING—		Oleyana	4.15
Jacksonville	3.45	Morehead	1.60	Omaha	2.25	MISSOURI—		Green River	5.80	Green River	5.80
Miami	4.55	Lake Charles	3.45	NEVADA—		MISSOURI—		Lander	5.35	Lander	5.35
Pensacola	3.10	New Orleans	3.10	Austin	8.15	NEVADA—		Sheridan	4.70	Sheridan	4.70
Tallahassee	3.20	Shreveport	3.25	Concord	8.65	NEW HAMPSHIRE—		WISCONSIN—		Taylor	4.15
Tampa	4.00	Bangor	2.95	Concord	2.55	NEW HAMPSHIRE—		WISCONSIN—		El Paso	5.95
						NEW HAMPSHIRE—		WISCONSIN—		El Paso	5.95

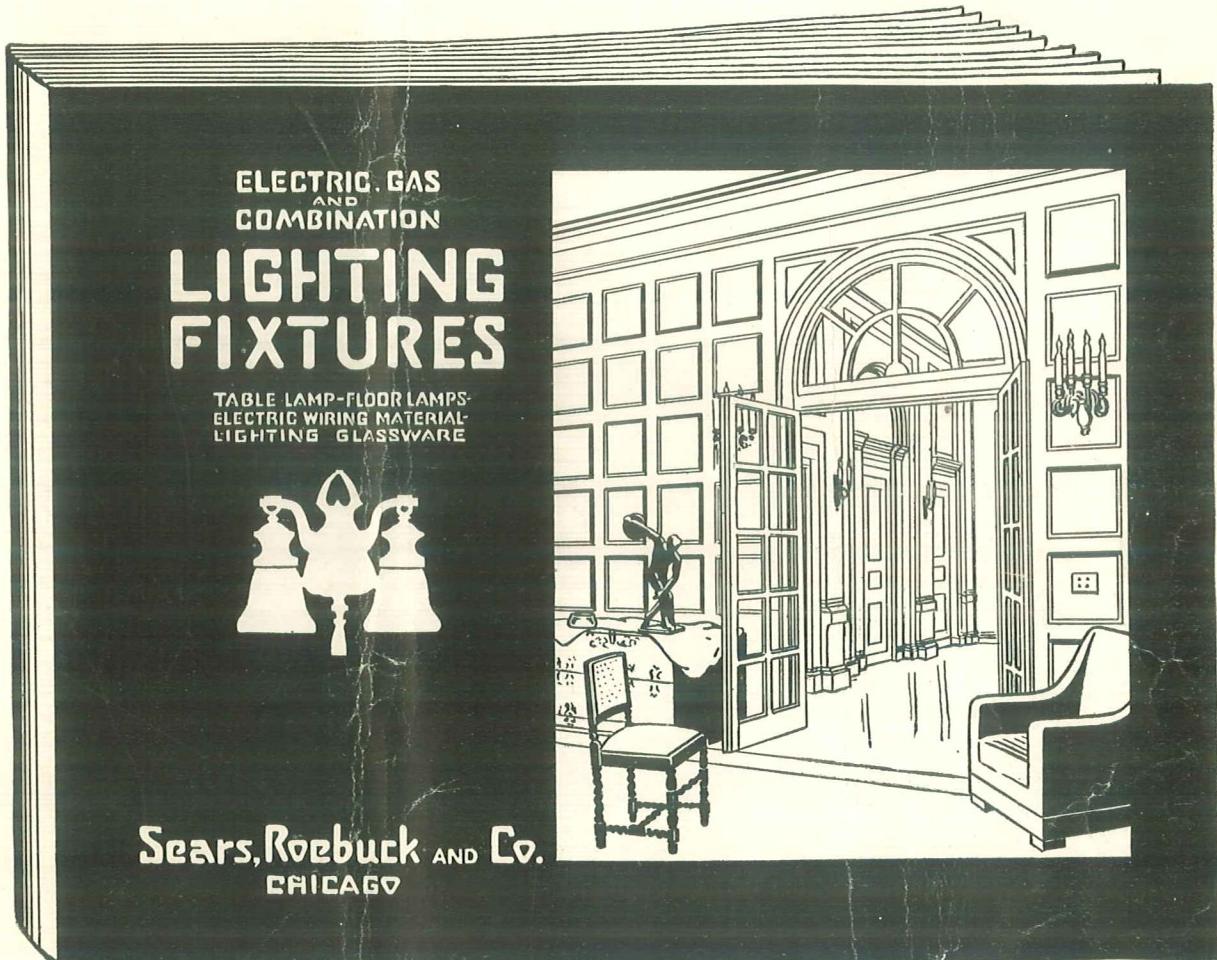
SCALE OF EXPRESS CHARGES BASED ON THE RATE PER 100 POUNDS.

Rate per 100 lbs....	\$0.60	\$0.75	\$0.90	\$1.00	\$1.15	\$1.25	\$1.35	\$1.40	\$1.50	\$1.60	\$1.70	\$1.75	\$1.80	\$1.85	\$1.95	\$2.00	\$2.10	\$2.15	
CHARGES ON																			
Package of 1 lb....	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26	.26
Package of 2 lbs....	.26	.26	.26	.26	.27	.27	.27	.27	.27	.28	.28	.28	.28	.28	.28	.28	.28	.28	.29
Package of 5 lbs....	.27	.27	.28	.29	.29	.30	.30	.31	.31	.32	.32	.32	.33	.33	.33	.34	.34	.34	.34
Package of 10 lbs....	.28	.30	.31	.32	.34	.35	.36	.36	.37	.38	.39	.40	.40	.41	.42	.42	.42	.43	.44
Package of 15 lbs....	.30	.32	.35	.36	.38	.40	.41	.42	.44	.45	.47	.47	.48	.49	.50	.51	.51	.53	.53
Package of 20 lbs....	.32	.35	.38	.40	.43	.45	.47	.48	.50	.52	.54	.55	.56	.57	.59	.60	.62	.63	.63
Package of 25 lbs....	.34	.37	.41	.44	.47	.50	.52	.54	.56	.59	.61	.62	.64	.65	.67	.69	.71	.72	.72
Package of 30 lbs....	.35	.40	.44	.47	.52	.55	.58	.59	.62	.65	.68	.70	.71	.73	.76	.77	.80	.82	.82
Package of 35 lbs....	.37	.42	.48	.51	.56	.60	.63	.65	.69	.72	.76	.77	.79	.81	.84	.86	.90	.91	.91
Package of 40 lbs....	.39	.45	.51	.55	.61	.65	.69	.71	.75	.79	.83	.85	.87	.89	.93	.95	.99	.1.01	.1.01
Package of 45 lbs....	.41	.47	.54	.59	.65	.70	.74	.77	.81	.86	.90	.92	.95	.97	1.01	1.04	1.08	1.10	1.10
Rate per 100 lbs....	\$2.20	\$2.25	\$2.30	\$2.40	\$2.45	\$2.50	\$2.55	\$2.60	\$2.65	\$2.75	\$2.85	\$2.90	\$2.95	\$3.05	\$3.10	\$3.15	\$3.20	\$3.25	
CHARGES ON																			
Package of 1 lb....	.27	.27	.27	.27	.27	.27	.27	.27	.27	.28	.28	.28	.28	.28	.28	.28	.28	.28	.28
Package of 2 lbs....	.29	.29	.29	.29	.29	.30	.30	.30	.30	.30	.30	.30	.30	.31	.31	.31	.31	.31	.31
Package of 5 lbs....	.35	.35	.35	.36	.36	.36	.36	.37	.37	.38	.38	.38	.39	.39	.39	.40	.40	.40	.40
Package of 10 lbs....	.44	.45	.45	.46	.47	.47	.48	.48	.49	.50	.51	.51	.52	.53	.53	.54	.54	.55	.55
Package of 15 lbs....	.54	.55	.56	.57	.58	.59	.59	.60	.61	.62	.64	.65	.66	.67	.68	.69	.70	.70	.70
Package of 20 lbs....	.64	.65	.66	.68	.69	.70	.71	.72	.73	.75	.77	.78	.79	.81	.82	.83	.84	.85	.85
Package of 25 lbs....	.74	.75	.76	.79	.80	.81	.82	.84	.85	.87	.90	.91	.92	.95	.96	.97	.99	.1.00	.1.00
Package of 30 lbs....	.83	.85	.86	.89	.91	.92	.94	.95	.97	.1.00	.1.03	.1.04	.1.06	.1.09	.1.10	.1.12	.1.13	.1.15	.1.15
Package of 35 lbs....	.93	.95	.97	1.00	1.02	1.04	1.05	1.07	1.09	1.12	1.16	1.18	1.19	1.23	1.25	1.26	1.28	1.29	1.30
Package of 40 lbs....	1.03	1.05	1.07	1.11	1.13	1.15	1.17	1.19	1.21	1.25	1.29	1.31	1.33	1.37	1.39	1.41	1.43	1.45	1.45
Package of 45 lbs....	1.13	1.15	1.17	1.22	1.24	1.26	1.28	1.31	1.33	1.42	1.44	1.46	1.51	1.53	1.55	1.58	1.60	1.60	1.60
Rate per 100 lbs....	\$3.40	\$3.45	\$3.55	\$3.65	\$3.70	\$3.80	\$3.85	\$4.10	\$4.15	\$4.20	\$4.55	\$4.70	\$4.75	\$5.00	\$5.35	\$5.50	\$5.80	\$5.90	\$5.90
CHARGES ON																			
Package of 1 lb....	.28	.28	.28	.28	.28	.29	.29	.29	.29	.29	.29	.29	.29	.30	.30	.31	.31	.31	.31
Package of 2 lbs....	.31	.31	.32	.32	.32	.32	.33	.33	.33	.34	.34	.34	.34	.35	.35	.36	.36	.36	.36
Package of 5 lbs....	.41	.41	.41	.42	.42	.43	.44	.44	.45	.46	.47	.47	.48	.49	.50	.51	.53	.53	.53
Package of 10 lbs....	.56	.57	.58	.59	.60	.61	.63	.64	.64	.68	.69	.70	.72	.76	.77	.80	.81	.81	.81
Package of 15 lbs....	.72	.73	.74	.76	.77	.78	.79	.83	.84	.88	.92	.92	.96	.1.01	.1.04	.1.08	.1.10	.1.10	.1.10
Package of 20 lbs....	.88	.89	.91	.93	.94	.96	.97	1.02	1.03	1.04	1.11	1.14	1.15	1.20	1.27	1.30	1.36	1.38	1.38
Package of 25 lbs....	1.04	1.05	1.07	1.10	1.11	1.14	1.15	1.21	1.22	1.24	1.32	1.36	1.37	1.44	1.52	1.56	1.64	1.66	1.66
Package of 30 lbs....	1.19	1.21	1.24	1.27	1.28	1.31	1.33	1.40	1.42	1.43	1.54	1.58	1.60	1.67	1.78	1.82	1.91	1.94	1.94
Package of 35 lbs....	1.35	1.37	1.40	1.44	1.46	1.49	1.51	1.60	1.63	1.63	1.75	1.81	1.82	1.91	2.03	2.09	2.19	2.23	2.23
Package of 40 lbs....	1.51	1.53	1.57	1.61	1.63	1.67	1.69	1.79	1.81	1.83	1.97	2.03	2.05	2.15	2.29	2.35	2.47	2.51	2.51
Package of 45 lbs....	1.67	1.69	1.73	1.78	1.80	1.85	1.87	1.98	2.00	2.03	2.18	2.25	2.27	2.39	2.54</				

INDEX

INDEX	
A	PAGE
Acetylene Gas Burners.....	35-36
Acid Hydrometers.....	9, 37
Alarm Clocks, Electric.....	17
Ammeters	9, 19, 37
Angular Boring Attachments.....	31
Annunciator Wire.....	19
Arc Lights, Gas.....	35
Arm and Transmitter, Telephone	23
Arresters, Lightning.....	23, 25, 28
Attachments for Suction Cleaners	10
Auger Bits.....	31
Auto Heaters, Electric.....	14
Auto Lamps.....	36, 38
Auto Lamp Sundries.....	36
Auto Lighting Outfits.....	38
Auto Lighting Switches.....	38
Auto Supplies.....	36-38
Auto Tools.....	36-38
B	
Bars, Wrecking.....	30
Batteries, Dry.....	18, 37
Batteries, Flash Light.....	18
Batteries, Gravity.....	18
Batteries, Medical.....	13, 15
Batteries, Storage.....	37
Batteries, Wet.....	18-19
Battery Carbons.....	19
Battery Connectors.....	19, 37
Battery Coppers.....	18
Battery Jars.....	18
Battery Switches.....	19
Battery Testers.....	9, 19, 37
Battery Zincs.....	18
Bells, Electric.....	19
Bells, Telephone.....	22-23
Bell Ringers, Indicating.....	24-26
Bell Ringing Transformers.....	19
Bell Units.....	23
Bell Wire.....	19
Bell Wire Staples.....	29
Belts, Fan.....	38
Belts, Linemen's Tool.....	29
Benches, Tub.....	33
Bits, Auger.....	31
Bits, Countersink.....	31
Bit Braces.....	31
Bit Holders, Extension.....	31
Bit Stock Drills.....	31
Blocks, Cut-Out.....	35
Blue Vitriol.....	18
Boilers, Electric.....	12
Boring Attachments.....	31
Brackets, Gas and Electric.....	34
Brackets, Telephone, Telegraph.....	29
Bread Toasters, Electric.....	10-11
Breast Drills.....	31
Bulls, Electric Light.....	9, 19, 35-36, 38
Bulbs, Flash Light.....	18
Bulbs, Miniature, Electric.....	19
Burners, Gas, Acetylene.....	35-36
Buttons, Push.....	19, 22
Button Switches.....	35
Buzzers	19
C	
Cable, Ignition.....	37
Cable, Wire.....	29
Call Bells, Electric.....	19
Candles, Electric.....	16
Caps, Hub.....	38
Capping, Electric Wiring.....	35
Carbons, Battery.....	19
Ceiling Lights, Electric.....	34
Chafing Dishes, Electric.....	11
Chandeliers, Electric and Gas	34
Chimneys, Gas.....	35
Circular Loom.....	35
Clamps, Wire.....	29
Chisels	30-31
Cleaners, File.....	30
Cleaners, Suction, Electric.....	10
Cleats, Porcelain.....	35
Cleat Rosettes.....	35
Climbers, Linemen's.....	29
Climber Straps.....	29
Clips, Wire.....	29
Clocks, Electric Alarm.....	17
Clusters, Plug.....	35
Cocks, Gas.....	35
Coffee Percolators, Electric.....	11
Coffee Urns, Electric.....	11
Cools, Ignition.....	19, 37-38
Coils, Impedance.....	21
Coils, Induction.....	23
Coils, Spark.....	19, 27-38
Compass Saws.....	30
Condensers, Telephone.....	22
Conduits	35
Connectors, Battery.....	19, 37
Coppers, Battery.....	18
Coppers, Soldering.....	30
Cords, Electric Drop.....	35
Cords, Electric Lamp.....	35-36
Cords, Receiver.....	23
Cords, Terminal and Plug, Motor	2
Cut-Out Blocks.....	35
Cylinders, Globe.....	35
Cylinder Head Gaskets.....	38
Cylinder Rings.....	35
D	PAGE
Dash Lamps, Auto.....	36
Domes, Electric, Gas.....	34
Door Bells.....	19
Double Boilers, Fireless Cooker	12
Drills	30-31
Drop Cords.....	35
Dry Batteries.....	18, 37
Dryers, Hair, Electric.....	15
DYNAMOS	39
E	
Egg Cookers, Electric.....	11
Electric Alarm Clocks.....	17
Electric Batteries.....	18-19, 37
Electric Batteries, Medical.....	13
Electric Bells.....	19
Electric Buzzers.....	19
Electric Candles.....	16
Electric Chafing Dishes.....	11
Electric Coffee Percolators.....	11
Electric Curling Irons.....	11
Electric Drop Cord.....	35
Electric Egg Cookers.....	11
Electric Engines.....	39
Electric Fans.....	9-10
Electric Fireless Cookers.....	12-13
Electric Fixture Wire.....	35
Electric Flash Lights.....	16-17
Electric Flash Light Batteries and Lamps.....	18
Electric Gas Range Lighters.....	16
Electric Grills.....	11
Electric Hair Dryers.....	15
Electric Heaters.....	10-11
Electric Heaters, Immersion.....	10-11
Electric Heaters, Tank.....	14
Electric Heating Pads.....	11
Electric House Wiring Sundries.....	35
Electric Irons.....	9-11
Electric Lamps, Auto.....	38
Electric Lamps, Miniature.....	19
Electric Lamps, Portable.....	16-17, 37
Electric Lamp Cord.....	35
Electric Lanterns.....	16-17
Electric Light Bulbs, 9, 19, 35-36, 38	33
Electric Light Bulbs, Miniature.....	19
Electric Light Wiring Sundries.....	35
Electric Lighting Fixtures.....	34-35
Electric Lighting Outfits, Auto.....	38
Electric Lighting Plants.....	9
Electric Lighting Wire.....	33
Electric Motors.....	2-7, 10, 39
Electric Push Buttons.....	19
Electric Radiators.....	11, 14
Electric Sewing Machine Motors	10
Electric Sterilizers.....	10-11
Electric Stoves.....	11
Electric Suction Cleaners.....	10
Electric Switches.....	9, 19, 29, 38
Electric Thrillers.....	39
Electric Toasters.....	10-11
Electric Toys.....	39
Electric Vibrators.....	13, 15
Electric Washing Machines.....	32-33
Electricians' Tools.....	29-30
Electro-Magnets.....	19
Engines, Electric.....	39
Engines, Toy.....	39
Engine Coils.....	19, 37-38
Engine Magnets.....	19
Engine Valves, Auto.....	38
Express Rates.....	76A
Extension Bells, Telephone.....	22
Extension Bell Units.....	23
Extension Bit Holders.....	31
F	
Fans, Electric.....	9-10
Fan Belts.....	38
Felt Washers.....	38
Cleats, Porcelain.....	35
Cleat Rosettes.....	35
Climbers, Linemen's.....	29
Climber Straps.....	29
Clips, Wire.....	29
Clocks, Electric Alarm.....	17
Clusters, Plug.....	35
Cocks, Gas.....	35
Coffee Percolators, Electric.....	11
Coffee Urns, Electric.....	11
Coils, Ignition.....	19, 37-38
Coils, Impedance.....	21
Coils, Induction.....	23
Coils, Spark.....	19, 27-38
Compass Saws.....	30
Condensers, Telephone.....	22
Conduits	35
Connectors, Battery.....	19, 37
Coppers, Battery.....	18
Coppers, Soldering.....	30
Cords, Electric Drop.....	35
Cords, Electric Lamp.....	35-36
Cords, Receiver.....	23
Cords, Terminal and Plug, Motor	2
Cut-Out Blocks.....	35
Cylinders, Globe.....	35
Cylinder Head Gaskets.....	38
Cylinder Rings.....	35
G	
Galvanized Guy Wire Strands.....	29
Gas Brackets.....	34
Gas Burners, Acetylene.....	35-36
Gas Cocks.....	35
Gas Fixtures.....	34-35
Gas Globes.....	35
Gas Hose Tubing.....	35
Gas Hose Cocks.....	35
H	
Gas Lights.....	35
Gas Mantles.....	35
Gas Range Lighters.....	16
Gaskets, Cylinder Head.....	38
Gasoline Engine Oils.....	37-38
Gasoline Engine Magnets.....	19
Gasoline Mantles.....	35
Gauges, Oil.....	38
Generators, Telephone.....	8, 23
Glass Insulators.....	29
Globes, Gas.....	35
Graphite, Motor.....	38
Gravity Batteries.....	18
Grills, Electric.....	11
Grinders, Valve.....	38
Ground Rods.....	29
Guy Rods.....	29
Guy Wire Strands.....	29
I	
Hack Saws, Blades.....	30
Hair Curlers, Electric.....	11
Hair Dryers, Electric.....	15
Hammers	30-31
Hand Power Machines, Motor	39
Hand Saws.....	31
Headlights, Auto.....	36
Heaters, Electric Immersion.....	10-11
Heaters, Electric Tank.....	14
Heating Pads, Electric.....	11
Hoists	30
Hooks, Telephone Switch.....	23
Horseshoe Magnets.....	19
Hose, Gas.....	35
Hose, Radiator.....	38
Hose Cocks, Gas.....	35
Hub Caps, Auto.....	38
Hydrometers, Acid.....	9, 37
J	
Ignition Cable.....	37
Ignition Coils.....	19, 37-38
Ignition Goods.....	19, 37-38
Ignition Outfits, Auto.....	37-38
Ignition Switches.....	38
Immersion Heaters, Electric.....	10-11
Induction Coils.....	21
Incandescent Gas Lights.....	35
Incandescent Gas Mantles.....	35
Indicating Bell Plug Switchboards.....	24
Induction Coils.....	23
Insulated Wire.....	19, 29, 35
Insulating Staples.....	29
Insulating Tape.....	29
Insulators	29, 35
Irons, Electric.....	9-11
Iron Reamers.....	31
K	
Keys, Telegraph.....	20
Kits, Tool.....	30, 36
Knives, Electricians'.....	29
Knobs, Porcelain.....	29, 35
L	
Lamps, Auto.....	36, 38
Lamps, Electric, Portable.....	16-17, 34
Lamps, Flash Light.....	18
Lamps, Trouble.....	36
Lamp Attachments for Battery	17
Lamp Cord.....	35-36
Lamp Reflectors, Auto.....	36
Lamp Tubing.....	36
Lanterns, Electric.....	16-17
Laundry Irons, Electric.....	9-11
Lighting Fixtures and Supplies.....	34-35
Lighting Fixtures, Auto, Electric.....	38
Lighting Plants, Electric.....	9
Lighting Switches, Auto.....	38
Lightning Arresters.....	23, 25, 28
Line Protectors, Telephone.....	23
Linemen's Climbers.....	29
Linemen's Straps.....	29
Linemen's Tools.....	29-30
Linewomen's Safety.....	29
M	
Magic Lanterns.....	40
Magnets	19
Magnet Wire.....	19
Magnetics, Gasoline Engine.....	19
Magneto Cable.....	37
Make and Break Coils.....	19
Fuses	9, 23, 25, 35
Fuse Blocks With Lightning Arresters.....	23, 25, 28
N	
Miniature Lamp Outfits.....	19
Miniature Motors.....	39
Mirrors, Auto Lamp.....	36
Moldings, Electric Wiring.....	35
Motors.....	2-7, 10, 39
Mouthpieces, Transmitter.....	23
Multiple Batteries.....	18-19
O	
Nail Cutting Saws.....	30
Nail Hammers.....	30-31
Nesting Utensils, Fireless Cooker	12
P	
Oil Gauges, Auto.....	38
H	
Pads, Heating, Electric.....	11
Parcel Post Rates.....	76B
Paste, Soldering.....	30
Parcels, Electric, Gas.....	34
Percolators, Coffee, Electric.....	11
Phones (See Telephones).	
Pins, Telephone.....	29
Pistons	38
Piston Rings.....	38
Plates, Wall.....	35
Pliers	39
Parcelain Cleats.....	35
Parcelain Insulators.....	29, 35
Parcelain Knobs.....	29, 35
Parcelain Rosettes.....	35
Parcelain Tubes.....	29, 35
Porch Lights.....	34-35
Portable Heaters, Electric.....	10-11
Portable Lamps.....	12-13
Post Card Projectors.....	40
Protectors, Telephone Line	23, 25, 28
Pulls, Wheel.....	38
Push Buttons	19, 22
Push Button Switches, Electric Light.....	35
R	
Radiators, Electric.....	11, 14
Radiator Caps, Covers, Hose.....	38
Radiator Hose.....	38
Reamers	31
Receivers, Telephone.....	23
Receiver Cord and Shells.....	23
Refacers, Valve.....	38
Reflectors, Auto Lamp.....	36
Relays, Telegraph.....	20
Relief Switches	23
Reseaters, Valve.....	38
Rings, Piston.....	38
Ringers, Telephone.....	23-26
Rods, Ground.....	29
Rods, Guy.....	29
Rope Thimbles.....	35
Rosettes, Porcelain.....	35
Rubber Tubing.....	35
Rules	30
S	
Saddle Staples.....	29
Sadrons, Electric.....	9-11
Safety Hoists	30
Safety Straps, Linemen's.....	29
Sal Ammoniac.....	19
Saws, Compass, Hack, Nail Cutting.....	30
Saws, Hand.....	31
Screwdrivers	29-30
Sewing Machine Motors.....	10
Shells, Receiver.....	23
Showers, Electric.....	34
Snips	30
Sockets, Electric Light.....	35
Socket Wrenches	36
Solder	30
Soldering Coppers, Handles.....	30
Soldering Paste.....	30
Sounders, Telegraph.....	20
Spark Coils	19, 37-38
Spark Plugs	37-38
Spark Plug Cases, Brushes, Wrenches	37
Splicing Clamps	30
Spotlights, Auto.....	36
Springs, Valve.....	38
Spurs, Linemen's.....	29
Staples, Bell Wire.....	29
Staples, Saddle.....	29
Steps, Telephone, Telegraph Pole	29
Sterilizers, Electric.....	10-11
Stone Drills	30
Storage Batteries	37
Stoves, Electric.....	11
Straps, Climber.....	29
Straps, Linemen's Safety.....	29
Stretchers, Wire.....	30
T	
Tackle Blocks.....	30
Tank Heaters, Electric.....	14
Tape, Insulating.....	29
Telegraph Instruments.....	20
Telegraph Keys.....	20
Telegraph Line Sets.....	20
Telegraph Outfits	20
Telegraph Relays	20
Telegraph Sounders	20
Telegraph Transmitters	20
Telephone.....	29
Telephone Arms and Transmitters	23
Telephone Brackets	29
Telephone Condensers	22
Telephone Line Protectors	23
Telephone Push Buttons	22
Telephone Switchboards	9, 23-27
Telephone Wire.....	29
Testers, Acid.....	9, 37
Testers, Battery.....	9, 19, 37
Thimbles, Wire Rope	29
Thrillers, Electric.....	39
Timers, Auto.....	38
Toys, Electric.....	39
TOOL KITS.....	30, 36
Transformers, Bell Ringing.....	19
Transformers for Electric Toys	39
Transmitters, Telegraph	20
Transmitters, Telephone	23
Trouble Lamps, Electric	36
Tub Benches	33
Tubes, Porcelain	29, 35
Tubing Rubber	36
Tungsten Lamps	9, 35
Turnbuckles	29
U	
Units, Extension, Bell.....	23
Urns, Coffee, Electric.....	11
Utensils, Fireless Cooker	12
V	
Valves, Auto Engine	38
Valve Adjusters, Grinders, Re-facers, Reseaters	33
Valve Springs	38
Valve Tools	38
Vehicle Lights, Electric	17
Vest Pocket Lights, Electric	16
Vibrators, Auto	38
Vibrators, Electric	13, 15
Vibrators, Medical	13, 15
Violet Ray Sets	18
Voltmeters	9, 19, 37
W	
Wall Plates	35
Washing Machines	32-33
Washtubs, Beaches	33
Watchmen's Lanterns, Electric	16
Water Heaters, Electric	10-11, 14
Wet Batteries	18-19
Wheel Pulls, Auto	38
Wire, Annulator	19
Wire, Bell	19
Wire, Guy	29
Wire, Insulated	19, 29, 35
Wire, Magnet	36
Wire, Office	19
Wire, Telegraph, Telephone	29
Wire Cable	29
Wire Clamps	29
Wire Clips	29
Wire Cutters (Pliers)	30
Wire Grips	30
Wire Rope Thimbles	29
Wire Solder	30
Wire Splicing Clamps	30
Wire Stretchers	30
Wire Stretches	30
Wireless Telegraph Practice Sets	29
Wiring Sundries, Electric Light	35
Wiring Sundries, Telephone	35
Wiring	35
Wiring, Telegraph	29
Wood Molding and Capping	35
Wrecking Bars	30
Wrenches, Auto	36
Wrenches, Nut	30
Wrenches, Spark Plug	30
Z	
Zincs, Battery	18

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